NOT TO CIRCULATE

Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/connecticutmedic4511conn

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 JANUARY 1981 NUMBER 1

## scientific:

*Nghia M. Vo, Michael J. Tortora, John T. DeMaio and Deal T. Aseltine, Jr.* 1 Complications of Peritoneovenous Shunting for Malignant Ascites
*Chih-Jung Shieh and Joseph G. Wihbey* 4 Necrotizing Fasciitis of the Perineum
*Milton J. Sands, Jr., Anthony S. Lachman, harles N. Leach, Jr., Hiroyoshi Takata and Elizabeth McLucas* 7 Thrombosis of the Porcine Heterograft Heart Valve Bioprosthesis
*rlotta Lief Schuster and Robert H. Humphries* 11 Benzodiazepine Dependency in Alcoholics
*Thomas J. Myers, Martha D. Perkerson, Barbara A. Witter and Norma B. Granville* 14 Hematologic Findings in Anorexia Nervosa
*Susan T. Gershman, Randi S. Most, John N. Lewis and James S. Marks* 17 An Epidemiologic Review of Cancer in an Industrialized Connecticut Town

## special articles:

*Hubert A. Ritter* 23 Nurse-Physician Collaboration
*Alan Meisel* 27 The "Exceptions" to Informed Consent (First of Two Parts)
*Consensus Development Summaries*
*The National Cancer Institute* 33 Cervical Cancer Screening: The Pap Smear
*Epidemiologic Notes and Reports*
*Center for Disease Control* 37 Reye Syndrome—Ohio, Michigan
*Alan R. Nelson* 39 The Professional Standards Review Organization Program
*AMA Council on Medical Education* 42 Moratorium on Recertification
*The Citation* 45 Current Medicolegal Issues
*American Medical Association* 47 Month in Washington

HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

1 3'81

## editorials:

*James H. Stuart* 53 Nurse-Physician Joint Practice
*Robert N. Butler* 54 Geriatrics and Manpower

## departments:

*Robert U. Massey* 49 *Reflections from the Dean's Office*
For Richer, for Poorer
*Joseph M. Healey* 51 *Law, Medicine and Public Policy*
Medical Decisions for Incompetent Adults: The *Spring* Case II
*Letters to the Editor*
*Frederick R. Behringer* 55 A Waiting Room "Malpractice Shingle"
*William A. Ryan* 56 Better Late than Never
*Connecticut State Medical Society* 57 Semi-Annual Reports
*Timothy B. Norbeck* 68 House of Delegates—Semi-Annual Meeting

## general:

56 In Memoriam
72 Physician Placement Service

**Owned, Published and Copyrighted, © 1981 by the Connecticut State Medical Society**

---

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# half-life

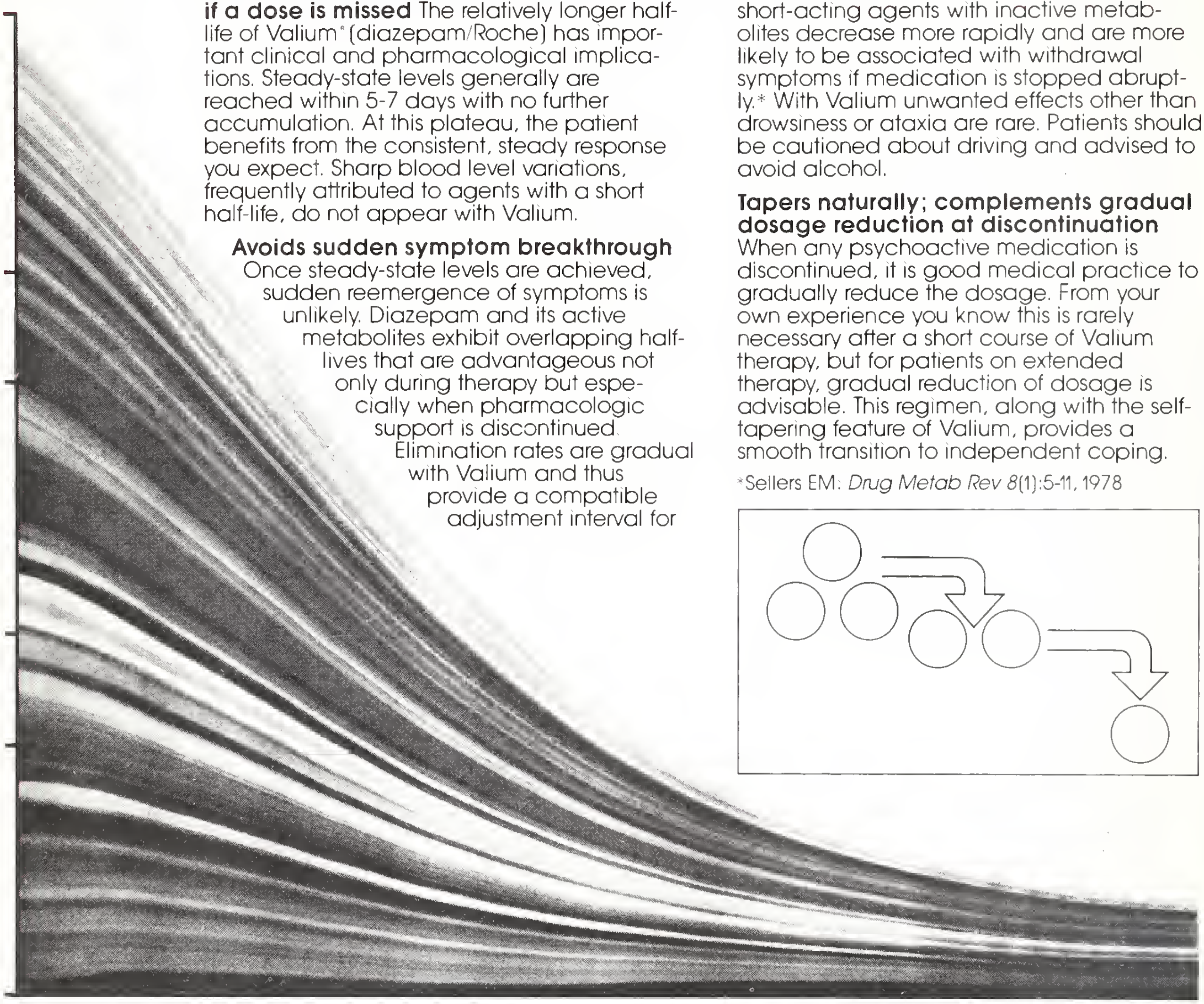
## Just one built-in advantage

**Ensures smooth therapeutic effect even if a dose is missed** The relatively longer half-life of Valium® (diazepam/Roche) has important clinical and pharmacological implications. Steady-state levels generally are reached within 5-7 days with no further accumulation. At this plateau, the patient benefits from the consistent, steady response you expect. Sharp blood level variations, frequently attributed to agents with a short half-life, do not appear with Valium.

**Avoids sudden symptom breakthrough** Once steady-state levels are achieved, sudden reemergence of symptoms is unlikely. Diazepam and its active metabolites exhibit overlapping half-lives that are advantageous not only during therapy but especially when pharmacologic support is discontinued. Elimination rates are gradual with Valium and thus provide a compatible adjustment interval for the patient. In comparison, blood levels of short-acting agents with inactive metabolites decrease more rapidly and are more likely to be associated with withdrawal symptoms if medication is stopped abruptly.* With Valium unwanted effects other than drowsiness or ataxia are rare. Patients should be cautioned about driving and advised to avoid alcohol.

**Tapers naturally; complements gradual dosage reduction at discontinuation** When any psychoactive medication is discontinued, it is good medical practice to gradually reduce the dosage. From your own experience you know this is rarely necessary after a short course of Valium therapy, but for patients on extended therapy, gradual reduction of dosage is advisable. This regimen, along with the self-tapering feature of Valium, provides a smooth transition to independent coping.

*Sellers EM: *Drug Metab Rev* 8(1):5-11, 1978



*in the management of symptoms of anxiety*

**Valium®** ⒸⅣ

*diazepam/Roche*

2-mg, 5-mg, 10-mg scored tablets

***effective therapy through efficient pharmacodynamics***

Before prescribing, please see summary of product information on next page

ROCHE ®

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 JANUARY 1981 NUMBER 1

## scientific:

*Nghia M. Vo, Michael J. Tortora, John T. DeMaio and Deal T. Aseltine, Jr.* **1** Complications of Peritoneovenous Shunting for Malignant Ascites
*Chih-Jung Shieh and Joseph G. Wihbey* **4** Necrotizing Fasciitis of the Perineum
*Milton J. Sands, Jr., Anthony S. Lachman, Charles N. Leach, Jr., Hiroyoshi Takata and Elizabeth McLucas* **7** Thrombosis of the Porcine Heterograft Heart Valve Bioprosthesis
*Carlotta Lief Schuster and Robert H. Humphries* **11** Benzodiazepine Dependency in Alcoholics
*Thomas J. Myers, Martha D. Perkerson, Barbara A. Witter and Norma B. Granville* **14** Hematologic Findings in Anorexia Nervosa
*Susan T. Gershman, Randi S. Most, John N. Lewis and James S. Marks* **17** An Epidemiologic Review of Cancer in an Industrialized Connecticut Town

## special articles:

*Hubert A. Ritter* **23** Nurse-Physician Collaboration
*Alan Meisel* **27** The "Exceptions" to Informed Consent (First of Two Parts)
*Consensus Development Summaries*
*The National Cancer Institute* **33** Cervical Cancer Screening: The Pap Smear
*Epidemiologic Notes and Reports*
*Center for Disease Control* **37** Reye Syndrome—Ohio, Michigan
*Alan R. Nelson* **39** The Professional Standards Review Organization Program
*AMA Council on Medical Education* **42** Moratorium on Recertification
*The Citation* **45** Current Medicolegal Issues
*American Medical Association* **47** Month in Washington

HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

FEB 13'81

## editorials:

*James H. Stuart* **53** Nurse-Physician Joint Practice
*Robert N. Butler* **54** Geriatrics and Manpower

## departments:

*Robert U. Massey* **49** *Reflections from the Dean's Office*
For Richer, for Poorer
*Joseph M. Healey* **51** *Law, Medicine and Public Policy*
Medical Decisions for Incompetent Adults: The *Spring* Case II
*Letters to the Editor*
*Frederick R. Behringer* **55** A Waiting Room "Malpractice Shingle"
*William A. Ryan* **56** Better Late than Never
*Connecticut State Medical Society* **57** Semi-Annual Reports
*Timothy B. Norbeck* **68** House of Delegates—Semi-Annual Meeting

## general:

**56** In Memoriam
**72** Physician Placement Service

**Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society**

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 FEBRUARY 1981 NUMBER 2

FEB 25 '81

## scientific:

*Yung H. Son* 75 Evaluation of Neck Mass: Computed Tomography
*Renato N. Mascardo and Paul R.C. Sullivan* 78 Transient Hyperprolactinemia and Hyperthyroidism in Autoimmune Thyroiditis
*Robert J. Carpenter, III and G. Gordon Snyder, III* 81 Current Concepts in the Surgical Treatment of Voice Disorders
*David F. Wender, Carol Kandall, Phyllis C. Leppert and Richard L. Berkowitz* 83 Hyaline Membrane Disease in Twin B Following Prolonged Rupture of Membranes for Twin A
*Neil Blumberg and Alfred J. Katz* 85 Therapeutic Plasmapheresis and Cytapheresis

## special articles:

*M. Patricia Sowka* 91 Medical Malpractice Closed Claims Study National Association of Insurance Commissioners
*Joan H. Marks* 103 Caring for the Whole Patient: Health Advocacy
*Alan Meisel* 107 The "Exceptions" to Informed Consent (Second of Two Parts)
*James M. Steckelberg, Ronald E. Vlietstra, Jurgen Ludwig and Ruth J. Mann* 110 Werner Forssmann (1904-1979) and His Unusual Success Story
*Connecticut Area II PSRO* 113 Quality of Patient Care Review
*James M. Savage* 115 Making PSRO Work for Your Medical Staff
*AMA Council on Medical Service* 119 Study of Health Maintenance Organizations
*American Medical Association* 125 Month in Washington

## editorials:

*John K. Springer* 131 Health Advocacy—Whose Job Is It?

## departments:

*W. Raymond James* 127 *The President's Page*
*Robert U. Massey* 129 *Reflections from the Dean's Office* Nothing but Problem Solving?
*Timothy B. Norbeck* 133 Minutes of Council

## general:

135 In Memoriam
136 New Members
137 Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 MARCH 1981 NUMBER 3

R 14 '81

## scientific:

*Melvin Saltzman, Myron H. Brand and Matthew McKinley* **139** Streptococcus Bovis Endocarditis and Colon Carcinoma
*Norman Tinanoff, Ronald Pinkerton and Chitraleka Ramanan* **141** Connecticut Physician's Role in Preventing Dental Caries
*David I. Weisblat* **144** Prostaglandins: An Overview
*Diana Novicky* **148** The Nursing Shortage: A Long-Term Dilemma
*Epitomes of Progress* **150** Important Advances in Clinical Medicine—General and Family Practice

## special articles:

*Consensus Development Summaries*

*National Institute of Child Health and Human Development* **155** Cesarean Childbirth
*Morris B. Abram* **163** Medicine and Me
*Frank Davidoff* **167** Advanced Internal Medicine (AIM)
*Marvin Garrell* **175** Malpractice, Quality Assurance, and Continuing Education

*History of Medicine*

*Frederick C. Warring, Jr.* **177** A Brief History of Tuberculosis
*Michael E. Reed* **189** Hospitals Can Require Liability Insurance
*William P. Isele* **191** Legal Update: A Maryland Peer Review Case
*American Medical Association* **193** Patient Package Inserts
*The Citation* **195** Current Medicolegal Issues

## editorials:

*Fred Fabro* **203** Governor Ella T. Grasso
**204** "The Art of Medication"—A Review

## departments:

*W. Raymond James* **197** *The President's Page*
*Robert U. Massey* **199** *Reflections from the Dean's Office* Searching and Fishing
*Joseph M. Healey* **201** *Law, Medicine and Public Policy* Criteria for Determining That Death Has Occurred: I
*Timothy B. Norbeck* **211** From the Executive Director's Office

## general:

**206** Special Notices
**209** Where AMA Stands on the Issues
**210** In Memoriam
**212** Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 APRIL 1981 NUMBER 4

UNIVERSITY OF MARYLAND
BALTIMORE

## scientific:

*Stephanie Spangler, Mary Catherine Bibro and Peter E. Schwartz* **215** Diagnostic Evaluation of Patients with DES Exposure In-Utero

*Martin E. Katz, Il Song Hahn, Gil G. Job and Allan L. Toole* **220** Intussusception as an Unusual Complication of Metastatic Lung Cancer

*Alfred Jay Bollet* **223** Toxic Shock Syndrome: A New Disease but an Old Phenomenon

*Epitomes of Progress* **225** Important Advances in Clinical Medicine—General Surgery

## special articles:

*National High Blood Pressure Education Program Coordinating Committee* **233** Hypertension in the Elderly

*Michael Pertschuk* **238** The FTC and Health Care: The Role of Competition

*Robert J. Touloukian* **241** The Legacy of Connecticut Surgery: Case Histories Revisited

*Hospital Viewpoint*

*John Q. Tilson* **245** The Hospital Trustee and Quality Assurance

*Swiss Academy of Medical Sciences* **247** Swiss Guidelines on Care of the Dying

*Judicial Council of the AMA* **249** Terminal Illness

*American Medical Association* **253** Patient's Right to Die in Dignity

*Orvan W. Hess* **254** OTA Finds Cost-Benefit Analysis Inadequate

*American Medical Association* **257** Month in Washington—Reagan's Health Program

## editorials:

*J. Wister Meigs* **266** A Study of Survivors of Cancer in Childhood

*Martin Duke* **266** The New Pathology—Iatrogenic Pathology

*Fred Fabro* **267** Bacchiochi vs. Johnson Memorial Hospital

## departments:

*W. Raymond James* **261** *The President's Page*

*Robert U. Massey* **263** *Reflections from the Dean's Office* On Managing a Pendulum

*Joseph M. Healey* **265** *Law, Medicine and Public Policy* Criteria for Determining That Death Has Occurred: II

*James H. Root, Jr.* **269** *Letters to the Editor* Sex Education in Perspective

*Timothy B. Norbeck* **275** Minutes of Council

## general:

**271** Special Notices

**273** 189th Annual Meeting Program CSMS

**278** Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 MAY 1981 NUMBER 5

MAY 28 '81
NOT TO CIRC.

## Special Issue

## Radiolc d Nuclear Medicine Techniques in the Diagnosis of Obscure Infections

*Vincent T. Andriole and Kenneth J.W. Taylor, Guest Editors*

### scientific:

*Arthur T. Rosenfield and Kenneth J.W. Taylor* 281 Ultrasound in the Diagnosis of Occult Infection
*C. Carl Jaffe* 284 Real-Time Ultrasonographic Evaluation of Intracardiac Infection
*Paul B. Hoffer* 288 Use of Gallium-67 in the Diagnosis of Occult Infections
*C. Carl Jaffe* 291 Computed Tomography Evaluation of Abscesses
*Morton G. Glickman* 296 Angiography in Fever of Unknown Origin
*Mathew L. Thakur* 302 New Radionuclides in the Diagnosis of Obscure Infections

### special articles:

*Connecticut Supreme Court* 305 Hospital of St. Raphael vs. Commission on Hospitals and Health Care
*Hospital Viewpoint*
*John T. Lynch, Marsha L. Silverman and Kathleen M. Delaney* 309 Emergency Room Utilization: An Initial Look
*AMA Board of Trustees, Council on Medical Education and Council on Medical Service* 311 AMA Policy on Physician's Assistants
*The Citation* 319 Current Medicolegal Issues
*American Medical Association* 321 Month in Washington

### editorials:

*Vincent T. Andriole and Kenneth J.W. Taylor* 331 A Symposium on Radiologic and Nuclear Medicine Techniques in the Diagnosis of Obscure Infections
*Stephen E. Ronai* 332 The St. Raphael's CT Scanner Decision: Judicial Deference or Judicial Timidity?
*Fred Fabro* 334 The Bacchiochi Case—Continued

### departments:

*The President's Page*
*Andrew J. Canzonetti* 326 The Death of a Symbol
*Reflections from the Dean's Office*
*Robert U. Massey* 327 Time for Change?
*Law, Medicine and Public Policy*
*Joseph M. Healey* 329 Criteria for Determining That Death Has Occurred: III
*Timothy B. Norbeck* 341 Minutes of Council

### general:

335 In Memoriam
337 189th Annual Meeting Program CSMS
346 Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

---

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 JUNE 1981 NUMBER 6

HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

JUN 23

## scientific:

*William D. Harley, Gerard F. Sava and Richard J. Fleming* 349 Computerized Tomography in the Evaluation of Lumbar Disc Herniation
*Boris S. Zilberstein, Noel L. Smith, Lateef Giwa, Alan R. Koornick, Jack S. Deitch, Barbara Jean Wilk and Harry S. Soroff* 353 Delayed Serratia Empyema Post Pneumonectomy Treated with Thoracoplasty and Muscle Flap
*Robert Pasky, III* 356 Disease Illness: An Approach to the Patient
*Gregory L. Holmes, Mark McKeever and Barry S. Russman* 358 Long Term Monitoring of Seizure Patients

## special articles:

*Medical Grand Rounds*
*Mark R. Cullen and James M. Robins* 363 Diseases of the Workplace: The Clinician's Role
*Hospital Viewpoint*
*Thomas F. Clinton* 371 Appropriateness Review: A Beginning or an End?
*Epitomes of Progress* 373 Important Advances in Clinical Medicine—Dermatology
*John F. Horty* 383 A Most Important Case on Hospital Responsibility to Patients—for Physicians
*AMA Council on Medical Service* 389 Status Report on Health Maintenance Organizations
*AMA Council on Medical Service* 393 Hospice Programs
*CSMS Council* 399 A Physician-Owned Insurance Company for CSMS
American Medical Association 403 Month in Washington
*W. Raymond James* 405 Address of the President of CSMS

## editorials:

*John L. Pool* 407 The Indentification of Surgical Treatment of Pulmonary Metastasis

## departments:

*The President's Page*
*Andrew J. Canzonetti* 410 Physicians Get Manipulated
*Reflections from the Dean's Office*
*Robert U. Massey* 411 Technology Unbound
*CSMS—Annual Meeting* 412 Summary of Proceedings—House of Delegates

## general:

414 Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Complications of Peritoneovenous Shunting for Malignant Ascites

## A Collective Review

NGHIA M. VO, M.D., MICHAEL J. TORTORA, M.D., JOHN T. DEMAIO, M.D.
AND DEAL T. ASELTINE, JR., M.D.

**ABSTRACT—The complications of 86 patients undergoing peritoneovenous shunting for malignant ascites are reviewed. They range from wound complications, pump failure, functional-metabolic changes, thrombosis of the large veins to metastasis. Wound infections and DIC appear to be low in this series. Bloody or infected peritoneal fluid, loculated ascites and prior coagulation defects contraindicate the procedure. Shunting allows 68% of the patients in this series to remain comfortable for more than three months.**

Pathophysiology of malignant ascites is complex. Some of the factors found to increase the production of peritoneal fluid in these cases include a vast exudative surface of proliferating cells, an excess production from uninvolved peritoneum,[2] plus the alterations of oncotic pressure exerted by the exudate. Obstruction of the lymphatic ducts by tumor cells and the limited flow capacity at the thoracic duct-venous junction contribute to decrease the drainage.[3] Considering the imbalance between production and drainage allows us to appreciate why medical treatment alone has limited success in relieving malignant ascites.

Various surgical attempts to drain the fluid have been devised including drainage into the bladder, the renal pelvis, the saphenous vein and the subcutaneous tissues.[19] Pollock was the first to report the use of a peritoneoatrial shunt for malignant ascites. More recently (1974) the LeVeen shunt has been used for relief of intractable cirrhotic ascites and later on for malignant ones. The operative details are well described by LeVeen and others.[12, 21] The purpose of this paper is to describe seven additional patients shunted for various malignancies and review its use as well as its complications.

## Case Reports

From 1977 to 1979, seven patients (five male and two female) had a LeVeen shunt inserted for various malignancies. These were two cases of breast Ca and one each of the cervix, ovary, pancreas, and bile ducts. The average age was 58 years, with the youngest 39 and the eldest 77. Ascites appeared after a mean interval of 13 months from the time of diagnosis of the primary, ranging from three months from a Ca of the pancreas to four years from a breast Ca. Three characteristic cases are reported in detail:

Case 2: M.G. 63 yo female had a radical mastectomy in 7-12-77 for an infiltrating ductal Ca. She initially received chemotherapy and subsequently Stilsbestrol following discovery of bone marrow metastasis (6-8-78). One month later she developed ascites and finally had a shunt inserted. At the time of her death, six months later, due to renal failure, her shunt was functioning well.

Case 6: E.F. 55 yo female underwent an exploratory laparotomy and left salpingoophorectomy for stage III ovarian Ca. She received chemotherapy and subsequently developed ascites for which she had a shunt inserted in June 79. One month later, she came back with axillary vein thrombosis, documented by venogram which subsequently resolved following anticoagulation. Because of reaccumulation of ascites, her shunt was revised in August. Two weeks later, she died following intestinal obstruction. An autopsy limited to the abdomen (following family's wishes), showed both large and small bowel obstructions by tumor.

Case 7: M.E. 51 yo had a Ca of the cervix with ureteral obstruction diagnosed in February 79. Ascites developed which was refractory to medical treatment and repeated paracenteses. She then underwent shunted in August 79. The peritoneal fluid was described as turbid at the time of surgery. Postoperatively, she went into septic shock and DIC. Despite intensive treatment, she expired two days later.

Clinical information related to the remaining patients will be found in the following table.

---

NGHIA M. VO, M.D., Resident in Surgery; MICHAEL J. TORTORA, M.D., Attending Surgeon; JOHN T. DeMAIO, M.D., Attending Surgeon; DEAL T. ASELTINE, JR., M.D., Attending Surgeon, Chief of Staff; all of the St. Francis Hospital and Medical Center, Hartford.

Table 1

| Name | Age-Sex | Primary Site | Complications | Survival |
|---|---|---|---|---|
| 1. A.C. | 51 F | Breast | | 7 mo |
| 2. M.G. | 63 F | Breast | Renal Failure | 6 mo |
| 3. R.I. | 39 M | Bile Ducts (Cholangio Carcinoma) | | 5 mo |
| 4. G.H. | 77 M | Pancreas | | 3 mo |
| 5. E.G. | 69 F | Skin (Melanoma) | Renal failure | 6 d |
| 6. E.H. | 55 F | Ovary | Axillary v. thrombosis<br>Shunt failure<br>Pleural effusion<br>Anemia | 2 mo |
| 7. M.E. | 51 F | Cervix | Septicemia<br>DIC<br>Anemia | 2 d |

Seventy-nine cases from five other series[9,15,19,20,23] will be reviewed (Table 2) along with the above seven cases.

Ca of the ovary represent the most common malignancy (41%) amenable to shunting, followed by Ca of the breast (17%), cervix (7%), colon, pancreas, stomach each 5%, unknown 6% and miscellaneous 10%.

## Discussion

Complications are divided into five categories: wound, pump failure, mechanical, functional-metabolic and metastasis.

Wound complications are rare in these series; strangely enough there were no wound infections in these immune deficient patients. Leakage around the tubing is a self limited process and usually does not require reoperation.

Pump failure may occur early or late. Early shunt failure (at least eight cases) is mostly related to a technical error. This is usually caused by a kinking of the tubing, either when it curves on itself to enter the internal jugular vein or rarely inside the vena cava.[8] Malposition of the tubing, into the inferior vena cava or back into the subclavian vein,[8] as seen in cases of cirrhotic ascites, may also account for early shunt failure. Late shunt failure occurs in ten patients (11%) and is due to obstruction of the tubing by proteinaceous material, clumps of malignant cells,[9] or clots in cases of bloody ascites.[23] Other causes of pump failure include loculated ascites,[20] as a result of previous surgery or by the adhesions formed by the malignancy itself and a non functioning valve, which in early series account for more than 5% failure.[11] Shunt patency can be evaluated by using an isotope study,[6] which when injected into the peritoneal cavity can be traced by a scanner thru a tubing.

Rarely thrombosis of the large central veins can occur following the shunting procedure. Thus far, three cases have been described in the literature,[4,24,26] all in cirrhotic patients and all found to have a clot at the tip of the venous end of the shunt. Dupas[4] was the first to report a case of superior vena cava thrombosis. The shunt and the clot were removed without difficulty. Thrombosis of the axillary vein, seen in one of our

Table 2

COMPLICATIONS OF PERITONEOVENOUS SHUNTING

(Some patients may have more than one complication)

| AUTHORS | STRAUS. | QAZI | LOKICH | KUDSK | POLLOCK | Our Series | Total |
|---|---|---|---|---|---|---|---|
| Number of cases | 35 | 20 | 7 | 8 | 9 | 7 | 86 |
| COMPLICATIONS | | | | | | | |
| I. WOUND | | | | | | | |
| 1. Leakage | 1 | | | | | | 1 |
| II. PUMP FAILURE | | | | | | | |
| 1. Early Thrombosis | 4 | ? | 1 | | 1 | 2 | 8 |
| 2. Late | 4 | 4 | | 1 | | 1 | 10 |
| III. MECHANICAL | | | | | | | |
| 1. Axillary vein thrombosis | | | | | | 1 | 1 |
| IV. BIOLOGIC FUNCTIONAL | | | | | | | |
| 1. Fever | 22 | | yes | | | 3 | |
| 2. Septicemia | 1 | | | | | 1 | 2 |
| 3. DIC | 1 | | 3 | 1 | | 1 | 6 |
| 4. Renal failure | | | | | | 2 | 2 |
| 5. Fluid overload | | | yes | | | | |
| Pulmonary hypertension | | | 1 | | | | |
| Pleural effusion | 1 | | yes | | | 1 | |
| 6. Hepatic failure | 1 | | | 1 | | | |
| 7. Pulmonary embolism | 1 | | | | | | |
| 8. Stroke | 1 | | | | | | |
| 9. Pulmonary edema | | | 1 | | | | |
| 10. Anasarca | | | | | 3 | | |
| 11. Anemia | | yes | | | | yes | |
| IV. METASTASIS | 0/9 | 0/4 | 2/2 | 0/2 | 0/1 | | 2/18 |
| V. LONG TERM FUNCTION (more than 3 mo) | 27 | 12 | 4 | 6 | 5 | 4 | 58 |

patients (case 6), reversed following anticoagulation. The process has been attributed to hemostatic abnormalities arising following the shunting procedure and in a rare case stasis in the vena cava.[4] This complication almost invariably results in shunt failure requiring its removal.

Fluid overload after shunting is occasionally encountered with secondary pulmonary hypertension, cardiac failure and pleural effusion. Dilutional anemia, occasionally requiring transfusions, is more frequently seen than anemia secondary to DIC. Non specific low grade fever, transient for 2-5 days is common and may reflect good function of the shunt. Sepsis occurred on two occasions, one being related to the shunting of infected fluid. DIC was frequently observed following shunting in cirrhotic patients, ranging from 33 to 100%,[1,7,10,22] was thought to be rare in malignant ascites.[13,23] Our review showed a 7% (six patients) incidence however, contributing to at least three deaths. It is thought to be due to an infusion of a procoagulant substance in the ascitic fluid,[22] which appears to be an activator of factor X.[18] The presence of low grade DIC on the other hand, reflects a good functioning shunt.[7]

How much the shunting procedure contributes to the dissemination of the disease is unknown. Of 18 autopsies, only two patients (11%) showed intravascular clusters of tumor cells and pulmonary parenchymal deposits.[15] Malignant ascites represents a late stage of malignancy, and in most instances corresponds to a widespread metastasis. Therefore shunting of malignant cells barely changes the prognosis or the natural history of the disease. Biologically, this may represent a metastasis of a metastasis.

Most patients with malignant ascites will die 3-6 months following cytologic diagnosis. Death is often brought on by the pressure effects of the ascites and by the intravascular fluid depletion with secondary renal failure.[14] Medical treatment may control milder forms of ascites, but diuretics are not as effective as in cirrhosis. Paracentesis, even with the modified closed technique,[5] is not effective because of rapid reaccumulation of fluid. This procedure has its own complications, 2.9%,[17] among which is peritonitis, a contraindication to any shunting procedure. This is well demonstrated in case 7. Multiple paracenteses caused intravascular dehydration with secondary renal failure and also infected the ascitic fluid. At the time of shunting, the turbid fluid was thought to be due to protinaceous material, when in reality it was infected. The patient subsequently died of sepsis and DIC because of rapid shunting of infected fluid. Perhaps Gram stains of the fluid before shunting would have prevented this.

From the above discussion, we can derive the following contraindications. They are: 1) grossly bloody peritoneal fluid,[23] 2) infected fluid, 3) loculated ascites,[20] 4) evidence of DIC or coagulation defects prior to surgery. A relative contraindication is right ventricular heart failure.[4]

Shunting has been found to improve the hemodynamics of the cirrhotic patients.[1,25] It may have the same effects in these patients with malignant ascites. It definitely gives them a sense of comfort and well being during the remaining months of their lives. The longest survivor in this series lived 24 months after the shunting procedure. 68% of the patients had significant clinical improvement for more than three months. More patients could be relieved, if we can decrease the high incidence of shunt failure. We believe this can be accomplished by correcting the mechanical factors leading to a non functioning shunt as well as using the new Denver type shunt, which has been reported to have a higher degree of patency.[16]

## Summary

Malignant ascites carries a grave prognosis. Peritoneovenous shunting has been effectively used in 68% of the patients in this series, when all medical treatment has failed. Despite few complications, it should be considered in selected patients in order to improve their well being.

## REFERENCES

1. Ansley JD, Bethel RA, Bowen PA, et al: Effect of peritoneovenous shunting with the LeVeen valve on ascites, renal function and coagulation in patients with intractable ascites. Surg 83-181, 1978
2. Bronskill MJ, Bush RS, Ege GN: A quantitative measurement of peritoneal drainage in malignant ascites. Cancer 40-2375, 1977
3. Dumont AE: The flow capacity of the thoracic duct-venous junction. The Am J Med Sci 269-292, 1975
4. Dupas JL, Redmond R, Vermynck JP et al: Superior vena cava thrombosis as a complication of peritoneovenous shunt. Gastroenterology 75-899, 1978
5. Fischer DS: Abdominal paracentesis for malignant ascites. Arch Int Med 139-235, 1979
6. Gorten RJ: A test for evaluation of peritoneovenous shunt function. J Nuc Med 18-29, 1977
7. Harmon DC, Demirjian Z, Ellman L et al: Disseminated intravascular coagulation with the peritoneo-venous shunt. Ann Int Med 90-774, 1979
8. Holcroft J, Kressel HY, Prager R et al: An experience with a LeVeen shunt. Arch Surg 111-302, 1976
9. Kudsk KA, Fabian TC, Webster DTJ et al: LeVeen shunts. Lancet 1-881, 1978
10. Lerner RG, Nelson JC, Corines P et al: Disseminated intravascular coagulation. Complication of the LeVeen peritoneovenous shunts. JAMA 240-2064, 1978
11. LeVeen HH, Christoudias G, Ip M et al: Peritoneovenous shunting for ascites. Ann Surg 180-580, 1974
12. LeVeen HH, Wapnick S: Operative details of continuous peritoneovenous shunt for ascites. Bull Soc Int-Chir 6-579, 1975
13. LeVeen HH, Wapnick S, Grosberg S et al: Further experience with peritoneovenous shunt for ascites. Ann Surg 184-574, 1976
14. LeVeen HH, Wapnick S, Diaz C: Ascites: its correction by peritoneovenous shunting. Curr Prob Surg. Feb 1979

15. Lokich JJ, Reinhold R, McCaffrey J et al: Management and complications of peritoneovenous shunt for malignant ascites. AACR Abstracts 1979

16. Lund RH, Newkirk JB: Peritoneovenous shunting system for surgical management of ascites. Cont Surg Feb 1979

17. Mallory A, Schaefer JW: Complications of diagnostic paracentesis in patients with liver disease. JAMA 239-628, 1978

18. Phillips LL, Rodgers JB: Procoagulant activity of ascitic fluid in hepatic cirrhosis. Surg 86-714, 1979

19. Pollock AV: The treatment of resistant malignant ascites by insertion of a peritoneoatrial Holter valve. Bri J Surg 62-104, 1975

20. Qazi R, Savlov ED, Sischy B. Peritoneovenous shunt for palliation of malignant ascites. ASCO Abstracts 1979

21. Reinhardt GH, Stanley MM: Peritoneovenous shunting for ascites. SGO 145-419, 1977

22. Schwartz ML, Swaim WR, Vogel SB: Coagulopathy following peritoneovenous shunting. Surg 85-671, 1979

23. Straus AK, Roseman DL, Shapiro TM: Peritoneovenous shunting in the management of malignant ascites. Arch Surg 114-489, 1979

24. Van Deventer GM, Snyder N, Patterson M: The superior vena cava syndrome. A complication of the LeVeen shunt. JAMA 242-1655, 1979

25. Wapnick S, Grosberg S, Kinney M: LeVeen continuous peritoneojugular shunt. Improvement of renal function in ascitic patients. JAMA 237-131, 1977

26. Zarchy TM, Chan CH, DiBianco R, et al: Peritoneovenous shunt for intractable ascites: Complications, Abstracts. Gastroenterology 74-1169, 1978

---

# Necrotizing Fasciitis of the Perineum

CHIH-JUNG SHIEH, M.D. AND JOSEPH G. WIHBEY, M.D., F.A.C.S.

ABSTRACT—Three cases of necrotizing fasciitis of the perineal area which occurred within a period of one year in a community hospital are presented.

The diagnosis and treatment of necrotizing fasciitis is discussed with emphasis on management when the perineum is involved. Two of the three patients died, indicating the high mortality and serious nature of the problem.

Early wide debridement, coupled with intensive parenteral antibiotic therapy, is the most important treatment factor in survival. Caution in avoiding premature secondary closure is advised. It is suggested that tissue biopsy and bacterial counts be used as guides to determine when secondary closure should be attempted.

Necrotizing fasciitis is an acute progressive infection of the skin, characterized by spreading necrosis of the fascia and the overlying subcutaneous tissue. It usually follows minor trauma or surgery, and recently, a relationship to drug addiction has been reported.[1] Meleney[2] originally described the infection as being caused by the synergistic action of the aerobic hemolytic staphylococcus aureus and a microaerophilic nonhemolytic streptococcus. A blister or bulla on the skin is commonly the first sign, followed by cyanosis or necrosis of the skin. The underlying subcutaneous tissue or fascia then becomes involved more widely than is apparent from the surface. Gangrene is a late manifestation and should not be regarded as being of diagnostic importance. Wilson et al[3, 4] stated that the most important factor is not the species of bacteria involved but the site of initial bacteria growth. The process usually starts in the subcutaneous tissue just over the superficial fascia. Mixed infection rather than single bacteria infection is a common finding. Antibiotic therapy alone is not adequate treatment. Wide surgical debridement of the devitalized tissue is the most effective procedure.

---

CHIH-JUNG SHIEH, M.D., Senior Resident, General Surgery; JOSEPH G. WIHBEY, M.D., Attending Surgeon, General Surgery; both of the Waterbury Hospital Health Center, Waterbury, CT.

Reprint requests to: 64 Robbins St., Waterbury, CT 06721 (Dr. Wihbey).

Necrotizing fasciitis of the perineum presents a difficult problem in management because of its location. The surgeon is committed to re-debride as often as necessary to control the infection. Factors that increase risk are diabetes, use of steroids or immunosuppressive drugs, chronic systemic diseases, vascular disease, and obesity.[5] These seem to be frequently associated with this disease. Sepsis or multiple organ failure will result if early aggressive management is not instituted. Exteriorization of the bowel should also be considered to prevent continued contamination of the perineum.

We are reporting a study of three patients with necrotizing fasciitis of the perineum and a review of their management. All three patients were obese, and two of them had, in addition, systemic vascular disease; one had diabetes and arteriosclerosis, the other had Wegener's granulomatosis. The latter two died despite appropriate antibiotic treatment and careful surgical wound management.

## Case Reports

### Case 1.

A forty-eight-year old white female was admitted to the medical service with abdominal pain and chronic bleeding painful hemorrhoids. She had a history of angina pectoris, with two attacks on the day of admission. She also had diabetes for 20 years, controlled by diet.

Physical examination: Blood pressure was 130/70 mmHg, pulse 100/minute, temperature 98.5°F., weight 139 pounds. She was a dark-skinned Caucasian. The heart had a regular rhythm without murmur. Rectal examination revealed large external and internal hemorrhoids.

Laboratory data: WBC 13,600, hemoglobin 16 mg%, hematocrit 49.3%, electrolytes normal, fasting blood sugar 365 mg%, cardiogram showed left bundle branch block with non-specific ST-T changes.

Hospital course: The workup for abdominal pain was within normal limits. The patient's diabetes was controlled by diet and Acetohexamide. A week after admission the patient underwent elective hemorrhoidectomy. On the sixth day the perirectal skin became necrotic, sloughed and was debrided at the bedside. She was started on intravenous ampicillin. However, progressive and extensive necrosis of the perirectal skin developed rapidly, and on the eighth postoperative day she was taken to the operating room and underwent extensive debridement and a transverse colostomy. The perirectal area was found to have necrotizing fasciitis involving the entire posterior aspect of the perianal region, extending to the coccyx. The involvement extended 10 cm. on the right and 6 cm. on the left side. At this time she was started on Gentamycin and Clindamycin. Cultures revealed staphylococcus epidermitis, fusobacterium, diphtheroids, bacteroides fragilis and B-hemolytic streptococcus. The open wound was treated with Silvadene Cream, sitz baths and whirlpool. Following this she did well with good local response. Gentamycin was stopped on the sixteenth postoperative day.

On the twenty-sixth postoperative day she was taken to the operating room and the entire large defect was closed by undermining with flap rotation. A Hemovac was utilized for drainage. This closure broke down within several days and the wound was reopened widely. The patient remained afebrile and Silvadene Cream and local debridement were restarted. Her temperature rose to 101°F. on the eighth day after the second operation. Of note is the fact that the patient was very uncooperative throughout her postoperative period. She pulled out her I.V.'s, Foley catheters, and scratched her rectal wound and colostomy site continually, requiring the use of restraints much of the time. Alimentation was given through a pediatric nasal feeding tube because the patient refused to eat. During this time her diabetes was difficult to control and required insulin. Her creatinine rose to 3.1 mg%. She was placed on Chloramphenicol when deterioration continued. The patient's septic course progressed and she became semicomatose. She showed no evidence of wound healing and even the colostomy site broke down. The patient expired on the forty-fourth postoperative day.

Commentary: The slough of perineal skin was not recognized as necrotizing fasciitis early and the intensive antibiotic therapy was not started at the time of first debridement. Also, the secondary closure of the perineal wound should have been delayed. The patient's uncooperativeness made the management extremely difficult. Complicating factors of obesity, diabetes, and arteriosclerosis exaggerated the infectious process.

### Case 2.

This 56-year-old white female, with a diagnosis of Wegener's granulomatosis of two years duration, was admitted with a history of rectal pain, bleeding and tenderness for three days. She was found to have thrombosed hemorrhoids.

The patient had deafness with maxillary and frontal sinusitis, pleural effusion with chondritis and focal glomerulitis with proteinuria. The granulomatosis was being treated with Prednisone and Cytoxan.

Physical examination: A well-developed and moderately obese woman. Blood pressure 130/80 mmHg, pulse rate 80/minute, temperature 100°F. A 4-cm. tender area of necrotic edematous tissue extended circumferentially around the anus. Huge, thrombosed hemorrhoids with yellowish exudate were also present.

Laboratory data: WBC 442,000, platelets 167,000. Electrolytes, BUN, and creatinine were normal. Cardiogram showed normal sinus rhythm with inverted T wave in the infralateral leads compatible with subendocardial ischemia.

Hospital course: A diagnosis of necrotizing fasciitis was made and emergency surgical debridement was performed on the date of admission. At operation, findings were gangrene of the skin, subcutaneous fat and underlying fascia for an area of 5 cm. wide around the perianal area. Ampicillin, Gentamycin and Clindamycin were given before operation and continued postoperatively. The wound culture revealed enterococcus, E. Coli and Clostridium which were sensitive to the above antibiotics. Blood and urine cultures were negative. Thrombosed hemorrhoids with vasculitis were noted on histologic examination. The patient's temperature rose to 102°F. for 48 hours. She was given two units of whole blood. The rectal wound seemed to show some improvement with less drainage. Forty-eight hours after debridement, the patient developed right hemiparesis, and an emergency brain scan and cerebral arteriogram gave an impression of a mass or abscess in the left parietal area. Lumbar puncture was non-specific. The patient was taken to the operating room and a left burr hole was made under local anesthesia. No abscess was found and a biopsy of the brain tissue was consistent with vasculitis and infarction. Shortly afterwards she became lethargic and decerebrate and expired twelve hours after the craniotomy. Autopsy showed diffuse intravascular thrombosis in the brain, gastrointestinal tract and mesentery.

Commentary: This patient developed necrotizing fasciitis spontaneously. Vasculitis and use of immunosuppressive drugs and Prednisone were the increased risk factors. Early recognition of this disease, a prompt emergency excision of all necrotic tissue, and administration of antibiotics seemed to control this infection. The cause of death was a cerebral vascular thrombosis most probably triggered by septicemia.

### Case 3.

This 61-year-old, obese male noted an erythematous, tender swelling in the left side of his scrotum ten days prior to admission. The patient squeezed this and pus came out in abundant quantities. A purulent bloody discharge persisted. He presented himself at the emergency room with cellulitis over the pubic and inguinal areas. The scrotum was 25 cm. in diameter with its entire surface necrotic and gangrenous. The penis was not visible in the edematous mass.

Physical examination: Markedly obese male; weight 237 pounds. A foul, very pungent odor penetrated the entire room and corridors.

The genitalia and the perineum showed extensive necrotizing fasciitis involving the whole scrotum, inguinal areas, and the lower abdomen (Figure 1).

Laboratory data: WBC 12,600, hemoglobin 11.6 gm., hematocrit 37.1%. BUN and electrolytes were normal. Glucose 119 mg%.

Hospital course: Gentamycin and Clindamycin were started on admission and the patient was taken to the operating room shortly thereafter. A wide excision and debridement was performed including excision of the devitalized tissue of the scrotum, completely exposing both testes which appeared healthy and uninvolved (Figure 2). The open wound was dressed with Silvadene Cream and the response was excellent. Daily Hubbard tank whirlpool therapy and twice-daily sitz baths were started. Minor debridements of the perineal wound were done daily. After six weeks the wound granulated in covering the testes. The patient was discharged on the forty-sixth postoperative day with a small open wound.

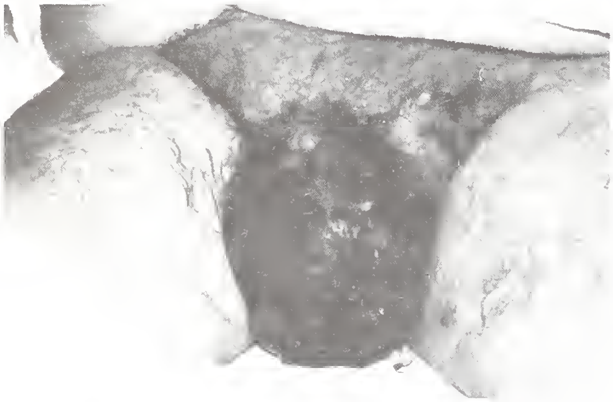


Figure 1
Extensive gangrenous necrotic involvement of the scrotum and inguinal areas.

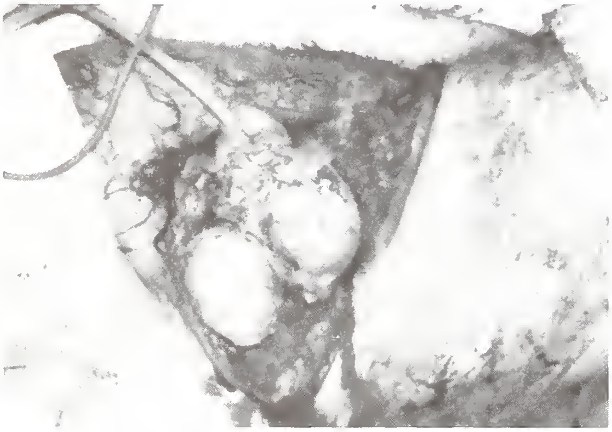


Figure 2
Wide surgical debridement and excision of scrotal tissue.

## Summary

Three cases of necrotizing fasciitis of the perineum are reported. All the patients had associated systemic diseases which included obesity, diabetes, arteriosclerosis and vasculitis. The bacterial cultures showed mixed aerobic and anaerobic infection. Extensive involvement of the perineal wounds required repeated surgical debridement. Early use of multiple broad spectrum antibiotics is recommended. Primary closure of the open granulating wounds should be delayed or not employed at all, unless bacteria can be kept below a critical measurable level.

## Discussion

Necrotizing fasciitis has been called by many names such as gangrenous erysipelas, hemolytic streptococcal gangrene, synergistic necrotizing cellulitis and hospital gangrene. Meleney[2] originally described necrotizing fasciitis as due to microaerophilic and anaerobic hemolytic streptococci, calling it "synergistic gangrene." Recent reports have shown mixed bacterial cultures and an increased frequency of gram negative bacteria. Crosthwait et al[6] found only two patients with hemolytic streptococcus in pure wound cultures of twenty-three patients. Pseudomonas may be present in the wound and not discovered when the other organisms are present.[7] Negative cultures should alert the surgeon to suspect a bacteroides infection.

Vasculitis with microthrombi and acute infiltration with neutrophils are characteristic in the subcutaneous tissue. Patients with necrotizing fasciitis frequently show fluid and electrolyte imbalance. The third space fluid loss due to an extensive exposed area can result in a hypovolemic status requiring correction. There may be an associated destruction of red blood cells or hemorrhage into this area which will require blood transfusion. Saponification with fat necrosis also can be present and cause hypocalcemia.

Needle aspiration has been recommended for an infected perineum with minimal symptoms or signs.[8] Gram stain should be obtained immediately and bacteroides should be suspected when the gram stain reveals gram positive rods. If no fluid or pus is available from the aspirate, a small amount of normal saline can be injected and then withdrawn after it has mixed with the infected extracellular fluid.

Broad spectrum antibiotics such as Cephalosporin or Ampicillin plus Gentamycin and Clindamycin are appropriate in these cases. The basis of treatment is to eradicate all the devitalized tissue. Excision of the gangrenous tissue will increase the tissue PH, encouraging new white cells to enter the area for further defensive action.

Early primary closure of the granulating wounds is not recommended. Delayed successful closure of the wound either by spontaneous ingrowth of epithelium, wound approximation, or grafting is dependent on the number of bacteria in the wound. Krizek et al[9] recommend using quantitative counts of bacteria from the wound tissue, which is a reliable way of determining further management. Wound healing is dependent on the successful control of the quantitative growth of bacteria below a critical level of $10^5$ bacteria per gram of tissue.

The mortality of this disease is still high, ranging from 30% to 50%.[9,10] Diabetes and vascular disease are the predominant risk factors related to the mortality. The most frequent causes of death are wound sepsis and multiple organ failure.

REFERENCES

1. Melluzzo PJ, Willscher M, Mason HDW, Balch HH: Necrotizing fasciitis in the narcotic addicts. Am Surg 42:251, 1976
2. Meleney FL, Friedman ST, Harvey HD: The treatment of progressive bacterial synergistic gangrene with Penicillin. Surgery 18:423, 1945
3. Wilson B: Necrotizing fasciitis. Am Surg 18:416, 1952
4. Strasberg SM, Silver MD: Hemolytic streptococcal gangrene. Am J of Surg 115:763, 1968
5. Stein JM, Stein HD: Management of severe surgical infections. Surg Round Oct:30, 1978
6. Crosthwait RW Jr, Crosthwait RW, Iordon GL Jr: Necrotizing fasciitis. J Trauma 4:149, 1964
7. Meade JW, Muelle R, Barber C: Necrotizing infection of the subcutaneous tissue and fascia. Ann Surg 168:274, 1968
8. Rosenberg PH, Shuck JM, Tempest BD, Reed WP: Necrotizing soft tissue infection of the perineum. Ann Surg 187:430, 1978
9. Krizek T, Robson MC: Biology of surgical infection. Surg Clin N Am 55:1261, 1975
10. Rea WJ, Wyrick WJ Jr: Necrotizing fasciitis. Ann Surg 172:957, 1970

# Thrombosis of the Porcine Heterograft Heart Valve Bioprosthesis

MILTON J. SANDS, JR., M.D., ANTHONY S. LACHMAN, M.B., F.C.P. (S.A.),
CHARLES N. LEACH, JR., M.D., HIROYOSHI TAKATA, M.D.
AND ELIZABETH McLUCAS, M.B., B.CH.

**ABSTRACT—The low incidence of significant complications in recipients of the Porcine heterograft heart valve bioprosthesis has resulted in its frequent use in many surgical centers. Isolated instances of tissue degeneration, fibrosis, infection and thrombosis do, however, occur. Thrombosis and secondary stenosis of a heterograft in the mitral position is documented. The incidence, etiology, diagnosis and management of this complication is discussed.**

In the 20 years since the first successful cardiac valve replacement, a variety of heart valve prostheses have been introduced. The majority of these prostheses have been abandoned, altered, or replaced by new models in the continuing attempt to overcome limitations present in all models to date. The most serious problem associated with the artificial heart valve is its inherent thrombogenicity with the potential development of systemic embolization or valve malfunction if life long systemic anticoagulation is not maintained. Tissue bioprostheses were introduced in the late 1960's in an attempt to overcome this limitation. These included valves made from autologous tissue such as pericardium, fascia lata, homograft aortic valves, and heterologous tissue. Although short term implantation results were satisfactory, more experience with these valves demonstrated an unacceptable incidence of valve failure resulting from tissue degeneration and fibrosis. In 1970, a new bioprosthesis, the Porcine aortic valve heterograft was introduced. The prosthesis consists of a three cusped Porcine aortic valve, similar in structure and function to its human counterpart, mounted to a semiflexible tricornuate polypropylene frame and preserved in glutaraldehyde. (Figure 1) This preservation technique appears to offer significant improvement in long term durability by rendering the tissue biologically and antigenically inert. The prosthesis has been well received. Recent early and mid-term

---

MILTON J. SANDS, JR., M.D., Associate Director of Cardiology, New Britain General Hospital; Associate Professor of Medicine, University of Connecticut Health Center; ANTHONY S. LACHMAN, M.B., F.C.P. (S.A.), Cardiologist, New Britain General Hospital; Assistant Professor of Medicine, University of Connecticut Health Center; CHARLES N. LEACH, JR., M.D., Director of Cardiology, New Britain General Hospital; Associate Professor of Medicine, University of Connecticut Health Center; HIROYOSHI TAKATA, M.D., Associate Surgeon, Hartford Hospital; Clinical Associate Professor, University of Connecticut Health Center; ELIZABETH McLUCAS, M.B., B.CH., Assistant Pathologist, New Britain General Hospital.

Reprint requests to: Department of Medicine, New Britain General Hospital, New Britain, CT 06050 (Dr. Sands).

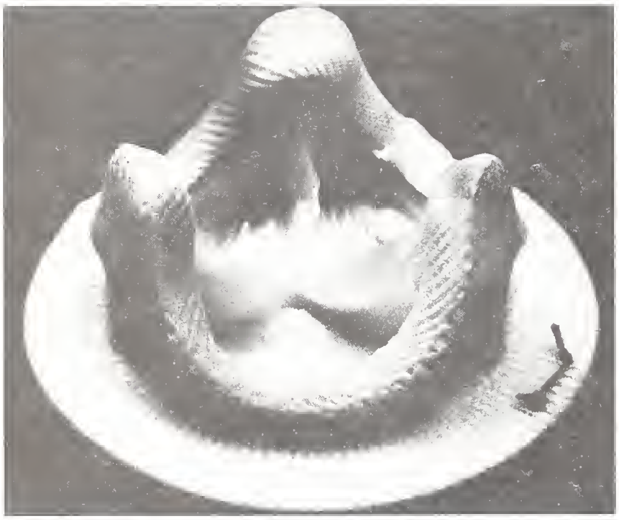


Figure 1
Hancock Porcine heterograft heart valve bioprosthesis.

reports confirm excellent flow characteristics with a low residual gradient, minimal hemolysis, excellent tissue durability for as long as 5 to 7 years, and such a low thrombogenic potential as to negate the need for life long anticoagulation in some centers.[1-4] Although reports of valve dysfunction have been infrequent, isolated instances of tissue degeneration, infection, and valve thrombosis have appeared.[1-9] The following case demonstrates thrombosis and secondary stenosis of a Porcine heterograft in the mitral position. The incidence, postulated etiology, diagnosis and management of this entity is discussed.

## Case Report

M.A., a 68-year-old white female underwent mitral valve replacement 5/17/77 for severe mitral regurgitation using a #31 glutaraldehyde-fixed Porcine aortic valve heterograft. (Hancock Laboratories, Anaheim, California) Her post-operative course was complicated by transient heart block, systemic embolization with transient aphasia and congestive heart failure. Systemic anticoagulation was initiated on the third post-operative day. Three months after valve replacement acute cholecystitis developed requiring reversal of anticoagulant therapy and cholecystectomy. Pre-operative cardiac evaluation demonstrated the presence of moderate congestive heart failure despite appropriate medical management. Physical examination revealed left ventricular enlargement, a third heart sound, an early basal systolic murmur and a low frequency apical diastolic murmur. Electrocardiogram demonstrated atrial fibrillation with a controlled ventricular response and left ventricular hypertrophy. Echocardiogram documented a normal left ventricular cavity with increased systolic volume (87 cc.), a normal diastolic volume (125 cc.), depressed stroke volume and ejection fraction (.3). There was paradoxical septal wall motion, a normal right ventricular cavity and enlarged left atrium. Thrombus was not seen within the left atrium. The mitral valve prosthesis was abnormal demonstrating the absence of a clearly defined valve orifice and in its place multiple linear densities suggesting valvular thrombus. (Figure 2) Further evaluation by catheterization was strongly advised but rejected by the patient and medical management continued. Readmission prompted by a syncopal episode occurred two months later with the admission electrocardiogram demonstrating short bursts of ventricular tachycardia. Ventricular fibrillation developed and although successful resuscitation was accomplished, persistent severe depression of cardiac output, cerebral ischemia, recurrent ventricular tachycardia and progressive renal insufficiency resulted in death 12/13/77. At autopsy the heart weighed 550 grams. The left atrium was moderately dilated and partially filled by a large mural thrombus that encircled the mitral annulus and was loosely adherent to it. Examination of the mitral valve prosthesis disclosed thrombus adherent to the ventricular surface of both posterolateral and anterolateral cusps. The presence of this thrombus severely restricted mobility of two of the three valve leaflets producing a functional stenotic valve. (Figure 3) Of further interest, two of the three struts of the prosthesis projected abnormally into the left ventricular outflow tract perpendicular rather than parallel to blood flow. (Figure 4) Microscopically, although organizing thrombus was found adherent to the ventricular surface of two of the three leaflets of the heterograft, there was no evidence of leaflet calcification or fibrosis. (Figure 5)

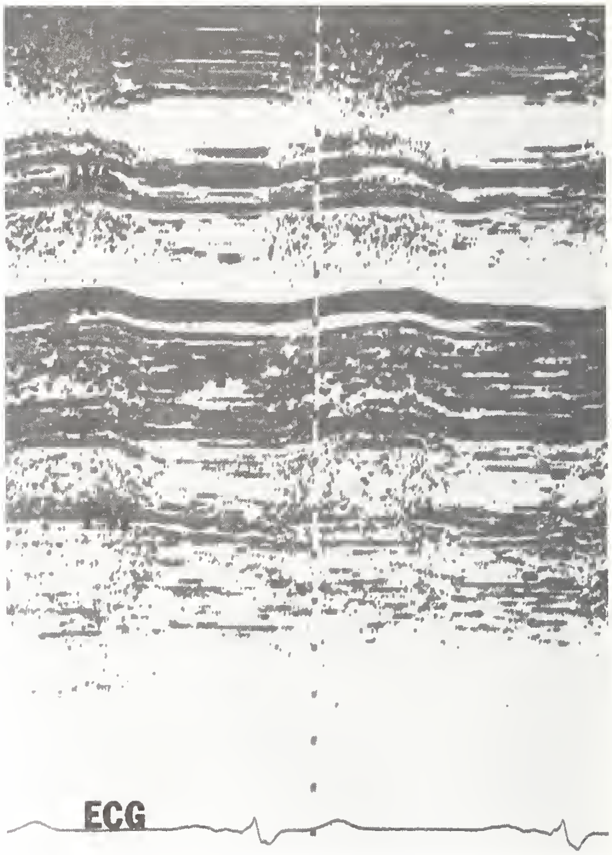


Figure 2
Echocardiogram of the Porcine heterograft in the mitral position demonstrating multiple linear echoes suggesting thrombus within the valve orifice.
IVS = interventricular septum, A = anterior strut of prosthetic valve, P = posterior strut, PW = posterior left ventricular wall, ECG = electrocardiogram

## Discussion

Prosthetic valvular dysfunction simulating acquired mitral stenosis resulted from thrombosis and fixation of two of the three leaflets of this Porcine heterograft. Although a definite threat in patients with certain types of heart valve prostheses,[10] the incidence of thrombosis appears rare in recipients of the Porcine heterograft. Predispositions in this patient although speculative include alterations of the valve surface during preparation or implantation, valve degeneration, malposition

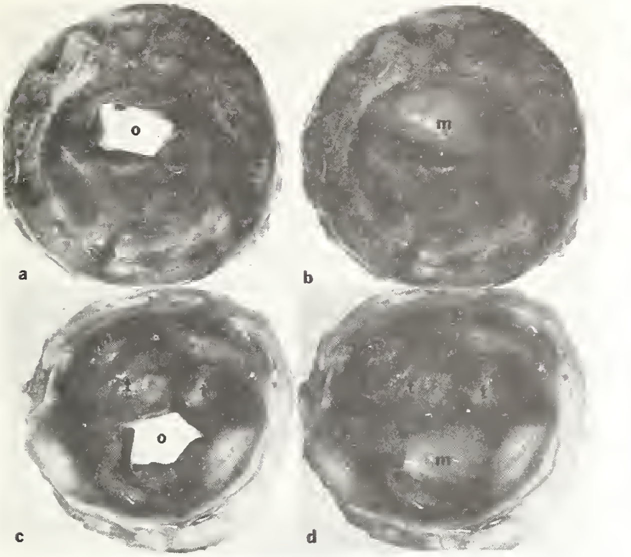


Figure 3
Thrombosed Porcine bioprosthesis in mitral position viewed from atrial (a,b) and ventricular surface (c,d). Thrombus is attached to the valve ring on the atrial surface. Viewed from the ventricular surface, thrombus is present in two of the cusps of the prosthesis. A narrowed valve orifice can be seen when the single mobile cusp is viewed in its open position. (c)
T = thrombus, t = thrombosed cusps, m = mobile cusp, o = valve orifice.

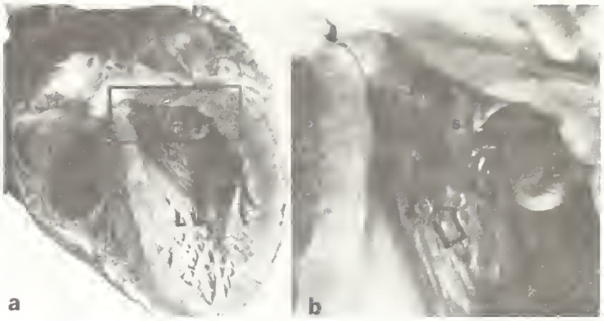


Figure 4
(a) Longitudinal section of the left ventricle with Porcine heterograft in situ. (b) Two struts lie within the ventricular outflow tract perpendicular rather than parallel to the flow of blood (arrow).

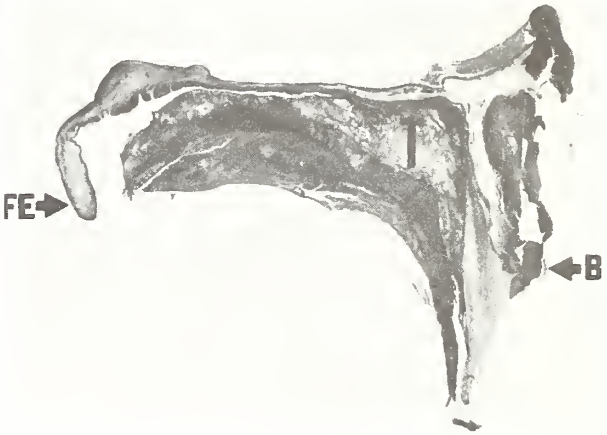


Figure 5
Cross sectional photomicrograph of the posterior lateral leaflet of the Porcine aortic valve heterograft demonstrating organizing thrombus adherent to the ventricular surface of the leaflet. T: thrombus, FE: free edge of prosthetic leaflet, B: base of prosthetic leaflet. (9x: masson-trichrome stain)

or malalignment of the prosthesis at surgery, atrial fibrillation and persistent depression of cardiac output in the post-operative period. Recent light and transmission electron microscopy of the Porcine heterograft in both pre and post-implantation periods[7,8] had demonstrated a substantial loss of valve surface endothelium subsequent to glutaraldehyde fixation with a development of variable amounts of post-implantation, age related disruption of the valve collagen matrix. Microscopy, however, failed to show significant aggregations of platelets or fibrin on the valve or its leaflets. These findings support the low incidence of clinical thrombosis and late thromboembolism in these patients and make it appear unlikely that the glutaraldehyde processing, manipulation at surgical implantation or post-implantation deterioration of the valve itself played a prominent role in the development of this problem. On the other hand, atrial fibrillation with a depressed cardiac output and improper orientation of the valve within the ventricular cavity were both present in this case and appear to have been important factors in the development of thrombosis. In reviewing previously reported cases of valve thrombosis, a depressed cardiac output was apparent in the post-operative period in 50% although malalignment of the valve has not been commented upon previously. At the time of implantation of this prosthesis in both the mitral and tricuspid position, particular attention must be directed to the positioning of the valve within the ventricular cavity. The valve leaflets are supported by three upright projections of the metal frame. These projections or struts must be positioned within the cavity so that they straddle, rather than obstruct the outflow tract of either ventricle. If, as in this case, the valve position is less than optimum, the struts may cause a variable degree of fixed and dynamic left ventricular outflow obstruction somewhat similar to that seen in idiopathic hypertrophic subaortic stenosis. The significance of this valve/strut malalignment appears dependent upon the degree of outflow tract obstruction produced by the valve and the size of the left ventricular cavity and could vary from a situation with minimal obstruction of no clinical significance to severe obstruction with marked depression of cardiac output and death at the time of surgery. Between these extremes may exist patients such as the one under discussion in whom a moderate degree of outflow tract obstruction is present with variable restriction of cardiac output. In these individuals it is likely that this obstruction generates turbulence, eddy currents and stasis within the ventricular cavity which, when combined with the marginal cardiac output, predisposes to the development of valve thrombosis. In support of this contention, here as in the majority of previously described cases, thrombus collected on the inner or ventricular surface of the valve. The appearance of both a systolic and diastolic murmur in the post-operative period suggested prosthetic valve dysfunction. Review of a portion of our patients with a Porcine heterograft in the mitral position demonstrates that the presence of these murmurs in themselves is not unusual and does not correlate with valve dysfunction. An apical diastolic murmur consistent with mitral stenosis was noted in six of twelve clinically asymptomatic heterograft recipients, two of whom underwent hemodynamic evaluation post-operatively for chest pain syndromes. In further support of the frequent presence and usually benign nature of this diastolic murmur, Mirro[11] demonstrated such a murmur by phonocardiography in fourteen of twenty-two consecutive asymptomatic mitral heterograft recipients while Johnson[12] noted its presence in twelve of fourteen patients undergoing routine post-operative recatheterization. Johnson further found correlation of this murmur with a significant mitral valve gradient in only one patient. The presence of the murmur relates directly to the residual mean resting gradient of two to seven mm.Hg. present in the normally functioning Porcine heterograft in the mitral position.[13] The presence of an ejection systolic murmur is also frequently observed in these patients and suggests that one or more of the heterograft struts protrudes into the left ventricular outflow tract generating turbulence which is usually well tolerated and of no clinical significance.

Retrospectively, the lack of expected clinical improvement in the post-operative period was the most important clinical finding. This when combined with the abnormal echocardiogram strongly suggested the prosthetic malfunction which was found at autopsy. Normally the Porcine heterograft in the mitral position is represented echocardiographically as two rather distinct parallel linear echoes within the ventricular cavity representing the anterior and posterior struts. The valve cusps themselves resemble the normal aortic valve echo forming a boxlike configuration as they open in diastole and a single linear echo as they close in systole. As demonstrated in this case, the presence of dense echoes within the central orifice or on the struts themselves suggests thrombosis of the valve. Of additional value in suggesting the diagnosis is the presence of a depressed maximal amplitude of diastolic leaflet separation and on occasion the systolic protrusion of dense echoes into the atrial cavity.[9, 14]

Although suggestive, an abnormal echocardiogram must be confirmed by cardiac catheterization. In the future, however, two-dimensional echocardiography may provide more specific information regarding exact valve orifice size and presence of strut encroachment into the left ventricular outflow tract.[15, 16]

The value of long-term anti-coagulation in the prevention of valve thrombosis is unclear, but based on our experience and the recommendations of others[1, 3, 4] all Porcine valve recipients should be considered for short term (6-12 weeks) anticoagulation with coumarin derivatives to decrease the likelihood of thromboembolism in the immediate post-operative period. It appears that long-term anticoagulation remains unnecessary except in those recipients demonstrating a low cardiac output, chronic or recurrent atrial fibrillation, or a prior history of systemic thromboembolization.

In conclusion, although less thrombogenic than prior prosthetic valves, the Porcine heterograft may thrombose. Although speculative, it appears that outflow tract secondary to malalignment of the valve at surgical implantation, and a depressed cardiac output either secondary to this obstruction or related to independent left ventricular dysfunction contribute to the development of this complication. The diagnosis should be considered in patients with a less than satisfactory post-operative recovery and in all those in whom unexplained clinical deterioration develops. Echocardiography is of distinct value in this situation and should be utilized early. A routine post-operative study in all recipients appears appropriate for comparison and follow-up purposes. Definitive diagnosis by catheterization and surgical intervention are imperative in those patients suspected of thrombosis in order to preserve life.

## REFERENCES

1. Horowitz MS, Goodman DJ, Fogarty TJ, Harrison D: Mitral valve replacement with the glutaraldehyde-preserved Porcine heterograft: clinical, hemodynamic, and pathological correlations. J Thorac Cardiovas Surg 67:885-895, 1974
2. Hannah H, Reis RL: Current status of Porcine heterograft prostheses: a five year appraisal. Circulation 54:III-28-31, 1976
3. Oyer PE, Stinson EB, Griepp RB, Shumway NE: Valve replacement with the Starr-Edwards and Hancock prostheses: comparative analysis of late morbidity and mortality. Ann Surg 186:301-309, 1977
4. Cevese PG, Gallucci V, Morea M, Volta SD, Fasoli G, Casarotto D: Heart valve replacement with the Hancock bioprosthesis. Circulation 56:II-111-116, 1977
5. Forfar JC, Cotter L, Morritt GN: Severe and early stenosis of Porcine heterograft mitral valve. Br Heart J 40:1184-87, 1978
6. Bloch WN, Karcioglu Z, Felner JM, Miller JS, Symbas PN, Schlant RC: Idiopathic perforation of a Porcine aortic bioprosthesis in the aortic position. Chest 74:579-581, 1978
7. Spray TL, Roberts WC: Structural changes in Porcine xenografts used as substitute cardiac valves: gross and histologic observations in 51 glutaraldehyde-preserved Hancock valves in 41 patients. Am J Cardiol 40:319-330, 1977
8. Fishbein MC, Gissen SA, Collins JJ, Barsamian EM, Cohn LH: Pathologic findings after cardiac valve replacement with glutaraldehyde-fixed Porcine valves. Am J Cardiol 40:331-337, 1977
9. Bloch WN, Felner JM, Wickliffe C, Symbas PN, Schlant RC: Echocardiogram of the Porcine aortic bioprosthesis in the mitral position. Am J Cardiol 38:293-298, 1976
10. Sands MJ, Leach CN, Lachman AS, Levine H: Thrombosis of the Björk-Shiley aortic valve prosthesis. JAMA 240:1411-1413, 1978

11. Mirro MJ, Pykel HJ, Wann LS, Weyman AE, Tavel ME, Steward J: Diastolic rumbles in normally functioning Porcine mitral valves. Chest 73:189-192, 1978

12. Johnson AD, Daily PO, Peterson KL, LeWinter M, DiDonna GJ, Blair G, Niwayama G: Functional evaluation of the Porcine heterograft in the mitral position. Circulation 51:I-40-48, 1975

13. Lurie AJ, Miller RR, Maxwell KS, Grehl TM, Vismara LA, Hurley EJ, Mason DT: Hemodynamic assessment of the glutaraldehyde-preserved Porcine heterograft in the aortic and mitral positions. Circulation 56:II-104-110, 1976

14. Horowitz MS, Tecklenberg PL, Goodman DJ, Harrison DC, Popp RL: Echocardiographic evaluation of the stent mounted aortic bioprosthetic valve in the mitral position. Circulation 54:91-96, 1976

15. Alam M, Madrazo A, Magilligan D, Goldstein S: M mode and two dimensional echocardiographic features of Porcine valve dysfunction. Am J Cardiol 43:502-509, 1979

16. Schapira J, Martin R, Rakowski H, Stinson E, French J, Shumway N, Popp R: Two dimensional echocardiographic assessment of patients with bioprosthetic valves. Am J Cardiol 43:510-519, 1979

# Benzodiazepine Dependency in Alcoholics

CARLOTTA LIEF SCHUSTER, M.D. AND ROBERT H. HUMPHRIES, M.D.

**ABSTRACT—Benzodiazepines have been cited as an offender in poly drug abuse in alcoholic populations. We present three adult males who experienced severe symptoms following withdrawal from benzodiazepines and alcohol or interchangeable dependency. The benzodiazepines were not the patients' preferred drug but were used to avoid drinking alcohol. We found that patients who use benzodiazepines for anxiety before hospitalization tend to have more problems in the detoxification process; benzodiazepines are contra-indicated in the outpatient treatment of alcoholism; patients presenting dual addictions to alcohol and benzodiazepines need inpatient treatment.**

Many practitioners still believe that the benzodiazepines are harmless drugs. A recent survey of drugs implicated in cases of fatal overdose frequently detected Diazepam (Valium) but labeled it relatively harmless since it was not considered to be the cause of death.[1] Although this may be true in terms of overdosage, we consider the benzodiazepines to be dangerous in terms of their addictive properties.

On our alcohol and drug rehabilitation service, we observed that the use of minor tranquilizers for anxiety before hospitalization complicates and prolongs by several weeks the detoxification process. Detailed histories on these patients reveal significant use of alcohol and benzodiazepines interchangeably. Patients report that in order to avoid abusing one type of substance, they become addicted to the other.

The addicting properties of benzodiazepines have been known for many years. In addition, cross tolerance of benzodiazepines with barbiturates and with alcohol have been well documented.[2] Wikler[3] and Smith and Wesson[4] both describe withdrawal regimens for drugs of the barbiturate type in which the benzodiazepines were listed as drugs producing an abstinence syndrome similar to alcohol. Many reports of abstinence syndromes brought about by withdrawal from benzodiazepines have appeared from 1965 until the present.[5-10]

Our first case describes the development of psychotic symptomatology following withdrawal from benzodiazepines; the second case documents a seizure associated with discontinuing benzodiazepines; and the third illustrates the course of a dual addiction to benzodiazepines and alcohol.

---

CARLOTTA LIEF SCHUSTER, M.D., Chief of the Alcohol and Drug Abuse Rehabilitation Service, Silver Hill Foundation, New Canaan, CT; Preceptor, Department of Psychiatry, St. Luke's Center, New York City. ROBERT H. HUMPHRIES, M.D., Chief of the Acute Treatment and Evaluation Unit at Silver Hill.

## Case History

Case 1.

A 62-year-old white male was referred to Silver Hill because of depression and chronic alcoholism. The patient had a 20 year history of alcoholism consisting of solitary drinking, leading to intoxication. For several months prior to admission, he had suicidal ideation. He had worked in the family store for many years, but for weeks prior to admission he stayed alone in his apartment above the store, refusing to emerge. It was impossible to determine the nature of the patient's pre-morbid personality due to the length of his alcoholic drinking. He reported taking Diazepam for anxiety for several years but denied taking more than prescribed. He was detoxified from alcohol with Diazepam given in steadily decreasing amounts. (Starting with 10 mg. q.i.d., the dosages were decreased in increments of 5 mg. each day.) Eight days after the last Diazepam was given, it was noted by the staff that the patient became increasingly agitated, and developed visual and auditory hallucinations. Because of this, 50 mg. of Thorazine was given q.i.d., which was increased to 100 mg. q.i.d. and 200 mg. at h.s. In addition the patient was given 100 mg. q4h PRN for agitation. After two days during which the patient's agitation increased, the Thorazine was discontinued and Valium was again given. The patient received 10 mg. i.m. stat and then 10 mg. q4h PRN for two days. This produced relief in a short time, and only three doses were necessary. The Valium was then reduced to 5 mg. q4h PRN. Only one dose was necessary. This brought about a total improvement in the patient's mental status within twelve hours, and with no recurrence of psychotic symptoms or disorientation. The Thorazine was given because the hallucinations and history of withdrawal to his apartment prior to admission suggested that the patient might be suffering from alcoholic hallucinosis. However, his visual hallucinations and his increased agitation in response to the Thorazine, with relief upon giving Valium, suggested that alcoholic hallucinosis was not the diagnosis. The explanation was that the original detoxification had not been completed and this was why the patient developed these symptoms. His second detoxification was actually a continuation of the first withdrawal regimen. Of note is the statement by the patient that he never took more Diazepam than prescribed. Assuming that he was not abusing Diazepam, then it seems he had become addicted to a prescribed amount. The patient developed his psychosis after the period in which it would have been expected that he would have withdrawal symptoms from alcohol alone. The symptom relief achieved by the Diazepam indicated that his withdrawal reaction was caused by abstinence from this substance.

Case 2.

A 32-year-old white male was admitted to Silver Hill because of severe depression and alcoholism. Between two to three years prior to admission he had achieved 18 months of abstinence with attendance in A.A. for six months. However, he was diligently taking prescribed amounts of Diazepam 10 mg. t.i.d., and Flurazepam (Dalmane) 30 mg. at h.s., for two years prior to admission. He denied ever exceeding these daily amounts. Gradually his drinking resumed and began interfering with his job performance and interpersonal relationships. He was arrested three times for driving while intoxicated. This precipitated his voluntary admission to Silver Hill.

For five days he was detoxified with gradually decreasing doses of Chlordiazepoxide Hydrochloride (Librium). Upon admission, the patient was prescribed Librium 25 mg. t.i.d. for one day, then 15 mg. q.i.d. for one day, then 15 b.i.d. followed with 5 mg. t.i.d. This was a total of five days of detoxification with Librium. Since he was no longer tremulous, the medication was then discontinued. He was doing quite well and seemed motivated to deal with his alcoholism. Two days following the discontinuation of the Chlordiazepoxide Hydrochloride, however, he had a grand mal seizure in full view of the staff. He was sent to a general hospital for evaluation and the seizure was diagnosed as being due to withdrawal. The seizure occurred seven days after a gradual and seemingly uneventful detoxification with Chlordiazepoxide Hydrochloride with no tremulousness for two days prior to the seizure. The timing of the seizure indicated that the seizure was due to withdrawal from Diazepam and Flurazepam. Alternate possibilities to explain the patient's seizures include a prior history of epilepsy or of a space-occupying lesion, such as a subdural hematoma or a neoplasm. However, the patient had no prior history of epilepsy. An EEG, taken the day of his seizure had been normal. The patient had a neurological workup in the general hospital to which he was transferred after the seizure, which ruled out the possibility of a space-occupying lesion. The patient was then given Phenobarbital, 30 mg. t.i.d., and Phenytoin Sodium (Dilantin), 100 mg. t.i.d. from which he was gradually withdrawn over a three-week period. At the end of the first week of the detoxification process, he became tremulous at 60 mg. of Phenobarbital per day. The Phenobarbital was then increased to 120 mg. per day and decreased by 15 mg. increments every other day with no further tremulousness or seizures. The Phenytoin Sodium was reduced by 100 mg. per week over a three-week period following the discontinuation of the Phenobarbital. An EEG taken a week after the patient's second admission was normal.

Seizures can occur with gradual reduction of medication. The exact dosage of detoxification agent is hard to titrate. As outlined in the Wikler article[3] and also in the article by Smith and Wesson,[4] Phenobarbital is the drug of choice because of its long-acting anticonvulsant property and the relative ease of calibrating dosage. It is the safest detoxification agent for the sedative group of drugs which include the barbiturates, non-barbiturate hypnotics and benzodiazepines. Librium had been given in Case 2 for alcohol withdrawal because the patient's addiction to Valium had not been appreciated before his seizure.

The first two cases of a withdrawal psychosis and a withdrawal seizure both involve sudden abstinence from low doses of Diazepam taken over a course of years. This low dose abstinence syndrome is beginning to be noted and studied.[11] Of particular interest in the second case is the difficulty that the patient had in remaining alcohol free while continuing to take minor tranquilizers. The third case illustrates this difficulty more clearly.

Case 3.

A 41-year-old white male was admitted to Silver Hill for treatment of alcoholism in the early 1970s. At that time he had been drinking from a pint to a fifth of scotch every night for several months. He was having blackouts, and he reported that his drinking was having a damaging effect both on his marriage and on his work performance. He had not been using any sedative drugs or minor tranquilizers.

After leaving the hospital, he maintained complete sobriety for a period of five years. He participated actively in A.A., attending at least two meetings per week. He also obtained a new job at a higher level and then was promoted to an even more responsible position.

Five years later he developed a duodenal ulcer and was treated by his internist with a regimen that included Diazepam 2 mg. q.i.d. Although the physician restricted the amount of Diazepam that he prescribed, the patient began to supplement it with substantial numbers of minor tranquilizers from the supply of a family member who kept a large amount in her home. At the height of his indiscriminate dependency he took "about a handful" of Chlordiazepoxide Hydrochloride, Diazepam, and Meprobamate (Miltown) in the course of each day. In order to maintain his dependency he ultimately forged prescriptions, a practice which led to his arrest. After the arrest, he stopped taking minor tranquilizers but he then immediately switched back to excessive drinking. The reappearance of his drinking problem resulted in his returning to Silver Hill within two years. He was having blackouts and was once again aware that his drinking had begun to damage both his work performance and his family life.

Our observations add to a growing list. Physicians and others working in the field of alcoholism have observed the problem of poly drug abuse among alcoholics and have cited benzodiazepines as an offender.[12, 13]

There is another level of evidence implying the addictiveness of benzodiazepines. The discovery of endorphins, naturally occurring substances which have opiate-like properties and specific central nervous system receptors, has led to new hypothesis for opiate addiction. Possibly there is a similar mechanism for benzodiazepines. It has been hypothesized that those who become addicted to opiates have some disturbance in their own neural mechanisms either in availability of circulating endorphins or at the receptor site. It is now known that there are neural receptors for benzodiazepines as well.[14-16] This would suggest that there are naturally occurring benzodiazepines and, just as with the endorphins, might explain addiction-proneness to be due to a deficiency of naturally occurring substance or a disturbance in binding at the receptor site.

In the light of this emerging evidence, it would seem advisable not to prescribe benzodiazepines for anxiety to anyone for more than a month and never to a patient with an addictive history. While it is conceivable, for example, that an alcoholic outpatient would respond to a regimen of Diazepam by lowering his alcohol intake, we contend that such an intervention would not constitute progress since the psychological dynamics and physiological addicting effects involved with both types of substances are so similar. It is understandable that physicians use the benzodiazepines to alleviate their patients' anxiety, and hopefully lessen their need for alcohol. We have found, however, that these drugs are literally "dry drinks" for alcoholics and cannot ameliorate the patients' addictive patterns.

Often anxiety in alcoholics is caused by the drinking process itself. This responds to abstinence, best fostered by active involvement in A.A. If the patient is still anxious, after several weeks of abstinence, this may be due to a psychological dependence on substances, in which case a minor tranquilizer is contraindicated because of its addictive potential. At times, the anxiety is phobic in nature and in this case a psychiatric evaluation is indicated to determine appropriate treatment, which could consist of psychotropic medication, such as antidepressants and/or a major tranquilizer, or a recommendation might be made by the psychiatrist for a behavioral modification program.

Finally, we suggest that patients presenting dual addictions to alcohol and benzodiazepines are more likely to require treatment in an inpatient setting because of the complexity and potential danger of the detoxification process.

## REFERENCES

1. Finkle, Bryan S, Ph.D.; McCloskey, Kevin L, Ph.D.; Goodman, Louis S, M.D.: Diazepam and Drug-Associated Deaths, JAMA August 3, Vol. 242 #5, pp.429-433
2. Goodman, LS; Gilman, A (Ed): The Pharmacological Basis of Therapeutics. 5th Ed., New York, MacMillon Publishing Company 1975 p. 290
3. Wikler, A: Diagnosis and Treatment of Drug Dependence of the Barbiturate Type, American Journal of Psychiatry, Vol. 125, pp. 758-765, 1968
4. Smith, David E, M.D.; Wesson, Donald R, M.D.: Phenobarbital Technique for Treatment of Barbiturate Dependence, Archives of General Psychiatry, Vol. 24, Jan. 1971, pp. 56-60
5. Barton, HH: Toxic Psychoses with Transient Dysmenestic Syndrome Following Withdrawal from Valium, American Journal of Psychiatry, Vol. 121, pp. 1210-1211 96J
6. Haskell, D: Withdrawal of Diazepam, JAMA, Vol. 283, p. 135 1975
7. Rifkin, A; Quitkin, F; and Klein, D: Withdrawal Reaction to Diazepam, JAMA, Vol. 236 pp. 2172-2173, 1976
8. Dysken, Maurice W, M.D.; Chan, Carlyle H, M.D.: Diazepam Withdrawal Psychoses, A Case Report, American Journal of Psychiatry, Vol. 134, May 1977, pp. 573-574
9. Preskhorn, SA; Dennen, LD: Withdrawal Reaction to Diazepam, JAMA, Vol. 236, pp. 2172-2173, 1976
10. Debard, Mark L, M.D.: Diazepam Withdrawal Syndrome, A Case With Psychoses, Seizure and Coma, American Journal of Psychiatry, Vol. 136, Jan. 1979, pp. 104-105
11. Winokur, Andrew; Rickels, Karl; Greenblatt, David J; Snyder, Peter J; Schatz, Norman J: Withdrawal Reaction from Long-Term, Low-Dosage Administration of Diazepam: A Double-Blind, Placebo-Controlled Case Study. Archives of General Psychiatry, Vol. 37, Jan. 1980, pp. 101-105
12. Schukit, Marc A, M.D.; Morrissey, Elizabeth R, M.D.: Drug Abuse Among Alcoholic Women, American Journal of Psychiatry, Vol. 136, 4B, April 1979, pp. 607-608
13. Shulman, Gerald: Saboteur of Potentially Successful Recovery, Distributed at ALMACA Meeting, Detroit, Oct. 4, 1979
14. MacDonald, J Ferguson; Barker, Jeffrey L; Paul, Steven A; Morangos, Paul J; Skolnick, Phillip: Inosine May Be An Endogenous Ligand for Benzodiazepine Receptors on Cultured Spinal Neurons, Science, Vol. 205, Aug. 17, 1978 pp. 715-717
15. Asano, Tomiko; Spector, Sidney: Identification of Inosine and Hypoxanthine as Endogenous Ligands for the Brain Benzodiazepine Binding Sites, Proc. National Academy Science, U.S.A., Vol. 76, No. 2, pp. 977-981, Feb. 1979 Neurobiology
16. Karobath, Manfred; Sperk, Gunther: Stimulation of Benzodiazepine Receptor Binding of Gamma-amino Butyric Acid, Proc. National Academy of Science, U.S.A., Vol. 76, No. 2, pp. 1004-1006, Feb. 1979 Physiological Science
17. Skolnick, Phil; Syapin, Peter J; Pough, Beth A; Moncada, Victoria; Morangos, Paul J, and Paul, Steven M: Inosine and Endogenous Ligand of the Brain Benzodiazepine Receptor Antagonizes Pentylenetctrazole, Proc. National Academy of Science, U.S.A., Vol. 76, No. 3, pp. 1515-1518, March 1979, Neurobiology

# Hematologic Findings in Anorexia Nervosa

THOMAS J. MYERS, M.D., MARTHA D. PERKERSON, M.D.,
BARBARA A. WITTER, M.D. AND NORMA B. GRANVILLE, M.D.

**ABSTRACT—Hematologic evaluation of thirteen patients with anorexia nervosa revealed anemia and leukopenia in 54%, neutropenia and relative lymphocytosis in 46%, thrombocytopenia in 31%, and lymphopenia and pancytopenia in 23%. Peripheral blood smears showed acanthocytes. Bone marrow aspirates and biopsies demonstrated extreme hypocellularity, fat depletion, and a gelatinous background material of acid mucopolysaccharide. With nutritional improvement of five patients, the peripheral blood and bone marrow abnormalities resolved. No correlation was found between the amount or duration of weight loss and the degree of hematologic abnormalities. In anorexia nervosa a decreased production of normal blood elements and bone marrow hypoplasia may result from a reduced requirement for hematopoietic tissue.**

## Hematologic Findings in Anorexia Nervosa

Anorexia nervosa is a psychophysiologic disorder with distinctive clinical and metabolic features.[1-3] Hematologic abnormalities occur commonly in patients with anorexia nervosa but have been emphasized in only a few previous reports.[4-13] The present study reports the hematologic findings from thirteen patients with anorexia nervosa and reviews the previous literature,

## Methods and Materials

### Patients

The records of thirteen female patients with anorexia nervosa who were admitted to Saint Francis Hospital and Medical Center since 1968 were reviewed. The diagnosis of anorexia nervosa was made in all patients according to established criteria.[1-3] All patients presented with weight loss without a demonstrable organic cause. Most patients also displayed many of the physiological features associated with anorexia nervosa, including amenorrhea, constipation, bradycardia, hypotension, hypothermia, dry skin, lanugo-type hair, peripheral edema and endocrine abnormalities.[1-3, 5, 6] Five patients were evaluated by the Hematology Service (Patients 1-5, Table 1).

### Peripheral Blood

Routine hematologic studies were performed in the hospital clinical laboratories using standard automated methods and 100-cell differential counts.

### Bone Marrow

Bone marrow aspirates were obtained from the posterior iliac crest or sternum and were stained with May-Greenwald-Giemsa solution. Bone marrow biopsies were obtained from the posterior iliac crest, fixed in formalin and stained with hematoxylin and eosin and Alcian blue.

### Statistical Analysis

Correlation and regression analyses were formed by the method of least squares.

## Results

### Patients

The weight loss of these patients ranged from 8-41 kg over 2-48 months. Five patients (Table 1, Patients 1-4, 6) demonstrated weight gains of 4.5-9 kg during hospitalization of 1-2 months.

### Peripheral Blood

The peripheral blood findings of the thirteen patients are recorded in Table 1. Anemia was present in seven

---

THOMAS J. MYERS, M.D., Fellow in Hematology, University of Connecticut School of Medicine, Farmington; currently, Assistant Professor of Medicine, The Memorial Hospital, Brown University, Providence, RI. MARTHA D. PERKERSON, M.D., Resident in Internal Medicine, Saint Francis Hospital and Medical Center. BARBARA A. WITTER, M.D., Assistant Hematology Service, Saint Francis Hospital and Medical Center. NORMA B. GRANVILLE, M.D., Director, Hematology Service, Saint Francis Hospital and Medical Center, Hartford, CT.

Table 1

PERIPHERAL BLOOD FINDINGS IN ANOREXIA NERVOSA

| | | *Hemoglobin* | *Leukocytes* | *Neutrophils* | *Lymphocytes* | | *Platelets** |
|---|---|---|---|---|---|---|---|
| *Patient* | *Age* | *(g/dl)* | *(x10$^3$/cumm)* | *(x10$^3$/cumm)* | *(%)* | *(x10$^3$/cumm)* | *(x10$^3$/cumm)* |
| Normal+ | | 12 - 16 | 4.5 - 11.0 | 1.5 - 7.0 | <53 | 1.0 - 4.5 | 150 - 450 |
| 1 | 15 | 9.8 | 4.2 | 1.3 | 60 | 2.5 | N |
| Recovery | | 12.0 | 4.3 | 1.4 | 55 | 2.3 | N |
| 2 | 17 | 7.8 | 2.2 | 1.0 | 43 | 0.9 | D |
| Recovery | | 12.0 | 5.3 | 3.2 | 31 | 1.6 | 210 |
| 3# | 62 | 7.8 | 2.6 | 1.7 | 30 | 0.8 | 100 |
| Recovery | | 13.8 | 5.6 | 2.7 | 38 | 2.1 | N |
| 4 | 17 | 12.3 | 2.9 | 0.9 | 59 | 1.6 | 120 |
| Recovery | | 11.9 | 5.4 | 3.5 | 29 | 1.6 | N |
| 5 | 14 | 11.3 | 2.9 | 1.4 | 38 | 1.1 | 140 |
| 6 | 20 | 10.7 | 2.7 | 1.4 | 34 | 0.9 | N |
| Recovery | | 10.9 | 4.2 | 2.4 | 29 | 1.3 | N |
| 7 | 14 | 12.0 | 6.7 | 2.8 | 52 | 3.5 | N |
| | 15 | 9.7 | 7.1 | 1.8 | 72 | 5.1 | N |
| 8 | 20 | 13.0 | | | | | |
| 9 | 10 | 14.5 | 7.1 | 4.3 | 34 | 2.4 | N |
| 10 | 25 | 11.5 | | | | | |
| 11 | 21 | 13.0 | 5.5 | 1.8 | 59 | 3.2 | N |
| 12 | 11 | 12.0 | 4.7 | 1.7 | 54 | 2.5 | N |
| Recovery | | 12.9 | 4.2 | 2.4 | 29 | 1.3 | N |
| 13 | 29 | 12.0 | 3.9 | 1.3 | 53 | 2.1 | N |

* N = Normal, D = Decreased

+ Normal ranges as established in Reference 17.

# The diagnosis of anorexia nervosa was first made when this patient was age 13. In subsequent years she was hospitalized multiple times for exacerbations of the disease.

patients (54%). The anemia was mild to moderate in degree with the lowest hemoglobin of 7.8 g/dl. Blood volume studies were performed in Patients 1 and 3 and showed decreased red cell volumes (700 and 600 ml, respectively) and normal plasma volumes. Reticulocyte counts of three anemic patients (Patients 1-3) were less than 1%. The erythrocyte indices, serum iron, total iron binding capacity, iron saturation, vitamin $B_{12}$ and folic acid levels were normal in all patients studied. In Patients 1-3 a gain in weight of 4.5-9 kg over 1-2 months was associated with a reticulocytosis of 3-10% and a return of the hemoglobin to normal.

Leukopenia was present in seven patients (54%), neutropenia in six (46%) and lymphopenia in three (23%). The lowest recorded white blood cell and total neutrophil counts were 2,200/cu mm and 900/cu mm, respectively. A relative lymphocytosis of 53-60% occurred in six patients (46%) and an absolute lymphocytosis of 5,100/cu mm was found in one patient (8%). Concomitant with a weight gain of 4.5-9 kg during 1-2 months in Patients 2-4, the leukocyte, neutrophil and lymphocyte counts returned to normal.

Thrombocytopenia and pancytopenia were present in four (31%) and three (23) patients, respectively. These abnormalities resolved with nutritional recovery in Patients 2-4.

The erythrocyte morphology was evaluated in peripheral blood smears from six patients and revealed acanthocytes in four. After nutritional improvement of these patients, the abnormal cells disappeared from the blood smears.

In these thirteen patients, no correlations could be found between the absolute amount of weight loss, the percentage of ideal weight loss or the duration of weight loss and the presence or degree of hematologic abnormalities. Similarly, the rate and degree of hematologic recovery showed no relationship with the amount or rapidity of weight gain.

## Bone Marrow

Bone marrow aspirates were performed in Patients 1-5. These aspirates yielded scanty amounts of a stringy, gelatinous material which upon smear appeared amorphous, fibrinous and eosinophilic. All marrows were hypocellular with only scattered normal hematopoietic and reticulum cells embedded in the amorphous background material. Fat was markedly decreased in all aspirates. Iron was decreased in three marrows and absent in another. Bone marrow biopsies from Patients 2-4 showed a marked hypocellularity, an absence of fat vacuoles and the eosinophilic background material (Figure 1). All three biopsies demonstrated positive staining with Alcian blue in areas corresponding to the eosinophilic material in sections stained with hematoxylin and eosin.

Bone marrow aspirates were obtained from Patients 2 and 3 after weight gains of 4.5 and 9 kg, respectively. These aspirates still demonstrated the gelatinous material but in moderately decreased amounts. This material was not present in the recovery marrow of Patient 1 after a 7 kg weight gain. All three recovery marrows showed improved cellularity with a prominent normoblastic erythrocytic hyperplasia. Similar to

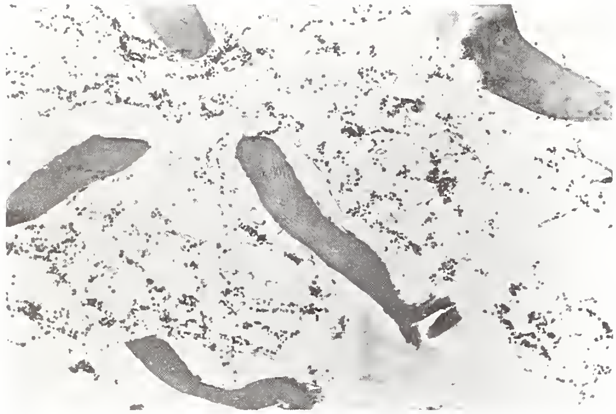


Figure 1

Section of bone marrow biopsy from a patient with anorexia nervosa showing a marked hypocellularity and decreased fat vacuoles. (Hematoxylin and eosin stain; x 100).

the peripheral blood findings, these bone marrow abnormalities and their correction showed no correlation with the parameters of weight loss or gain.

## Discussion

The present study demonstrates that hematologic abnormalities occur commonly in patients with anorexia nervosa. In the present group of thirteen patients with anorexia nervosa, anemia and leukopenia occurred in 54%, neutropenia and relative lymphocytosis in 46%, thrombocytopenia in 31%, and lymphopenia and pancytopenia in 23%. Two-thirds of the peripheral blood smears examined showed erythrocyte acanthocytosis. An amorphous eosinophilic background material, a marked hypocellularity and fat depletion were observed in all the bone marrow aspirates and biopsies. Bone marrow biopsies also showed positive staining of the eosinophilic material with Alcian blue, suggesting the acid mucopolysaccharide nature of this material. With an improved nutritional status and weight gain in five patients, the peripheral blood findings returned to normal and the bone marrows showed a decrease in the gelatinous material and an improved cellularity, especially erythrocytic. This study found no correlation between the degree or rate of weight loss or gain in these patients and the presence or degree of hematologic abnormalities and their reversal.

Anemia has been reported in 7-83% of patients with anorexia nervosa.[1-6, 12] The anemia has been associated with reticulocytopenia,[5, 6] ferrokinetic studies indicating erythroid hypoactivity,[4, 5] and low normal or slightly subnormal red cell survival studies.[5] Serum iron, total iron binding capacity, iron saturation, folic acid and vitamin $B_{12}$ levels were usually normal.[3, 5] Thus, the anemia has been attributed to bone marrow hypoproduction.[4] In two reports the anemia resolved after a weight gain by the patients.[5, 6]

Peripheral blood erythrocyte morphologic abnormalities have been infrequently described in anorexia nervosa but, when noted, have consisted of acanthocytosis and poikilocytosis.[5, 12, 13] The cause of these erythrocyte abnormalities has not been firmly established. Acanthocytosis is an erythrocyte change usually secondary to a plasma lipoprotein abnormality, either beta lipoprotein deficiency or circulation of a lipoprotein with an increased ratio of free cholesterol to phospholipid (as in liver disease).[14] Reduced or absent beta lipoprotein levels now have been demonstrated in patients with anorexia nervosa, and it was speculated that this lipoprotein deficiency accounted for the acanthocytosis found in these patients.[5, 12] As with the anemia of anorexia nervosa, these erythrocyte changes are reversible after patients regain weight.[5, 6]

Leukopenia has been present in 20-50% of patients with anorexia nervosa,[1, 2, 4-8, 11] and has been variously associated with neutropenia,[5-8, 11] lymphopenia,[5, 6, 11] relative lymphocytosis[1, 2, 4, 8] or monocytopenia.[11] Mant and Faragher suggested that the neutropenia was due to a redistribution of granulocytes within granulocytic compartments.[5] However, a decreased granulocyte production seems as plausible an explanation and is supported by the frequent finding of granulocytic hypoplasia in bone marrow specimens.[2-6] Yet, in spite of this marrow granulocytic hypoplasia, the marrow granulocyte reserve of patients with anorexia nervosa appears to be adequate as indicated by the peripheral blood granulocyte rise after an injection of purified polysaccharide extract of Pseudomonas[4] or etiocholanolone.[5] In addition to granulocytopenia, patients with anorexia nervosa may demonstrate granulocyte bactericidal, chemotactic and adhesion defects.[7, 8] Nevertheless, an increased risk of infection does not seem to occur in these patients.[11] A return to normal of white cell number and function has been observed with clinical recovery of the disease.[5, 7]

Thrombocytopenia[2, 3, 5, 6] and pancytopenia[2, 5, 12] have been reported infrequently in anorexia nervosa. In one study these abnormalities reversed after the patients gained weight.[5]

Bone marrow aspiration from patients with anorexia nervosa has usually yielded only a stringy, gelatinous substance which appeared on smear as an amorphous eosinophilic background material.[4-6, 12, 13, 15] Extreme hypocellularity and fat depletion have been the other characteristic bone marrow morphologic features.[2-4, 13, 15] The eosinophilic material has been reported to be an acid mucopolysaccharide, hyaluronic acid,[13, 16] a minor background connective tissue substance of the normal bone marrow.[4, 5] An apparent increase in this background material occurs in anorexia nervosa and this material may possibly represent the major structural support for marrow cells in this disorder.[4, 5] In addition to these characteristic findings, a relative lymphocytosis,[2, 4, 6] a reticulohistiocytosis[5] and sea-blue histiocytes[5] have occasionally been found in bone marrow specimens in anorexia nervosa. The marrow hypoplasia and acid mucopolysaccharide content have reverted to normal after nutritional recovery of patients with anorexia nervosa, suggesting that they may have been a physiologic response to a reduced requirement for hematopoietic tissue in this disorder.[5,6]

REFERENCES

1. Seidensticker JF, Tzagournis M: Anorexia nervosa-clinical features and long term follow-up. J Chron Dis 21:361-367, 1968
2. Warren MP, VandeWiele RL: Clinical and metabolic features of anorexia nervosa. Am J Obstet Gynecol 117:435-449, 1973
3. Silverman JA; Anorexia nervosa: clinical observations in a successful treatment plan. J Pediat 84:68-73, 1974
4. Pearson HA: Marrow hypoplasia in anorexia nervosa. J Pediat 71:211-215, 1967
5. Mant, MJ, Faragher BS: The hematology of anorexia nervosa. Br J Haematol 27:737-749, 1972
6. Lampert F, Lau B: Bone marrow hypoplasia in anorexia nervosa. Europ J Pediat 124:65-71, 1976
7. Gotch FM, Spry CJF, Mowat AG, Beeson PB, Maclennan ICM: Reversible granulocyte killing defect in anorexia nervosa. Clin Exp Immunol 21:244-249, 1975
8. Pamlblad J, Fohlin L, Lundstrom M: Anorexia nervosa and polymorphonuclear (PMN) granulocyte reactions. Scand J Haematol 19:334-342, 1977
9. Carryer HM, Berkman JM, Mason HL: Relative lymphocytosis in anorexia nervosa. Proc Staff Meet Mayo Clin 34:426-432, 1952
10. Anyan WR: Changes in erythrocyte sedimentation rate and fibrinogen during anorexia nervosa. J Pediat 85:525-527, 1974
11. Bowers TK, Eckert E: Leukopenia in anorexia nervosa: lack of increased risk of infection. Arch Intern Med 138:1520-1523, 1978
12. Amrein PC, Friedman R, Kosinshi K, Ellman L: Hematologic changes in anorexia nervosa. JAMA 241:2190-2191, 1979
13. Cornbleet PJ, Moir RC, Wolf RL: A histochemical study of bone marrow hypoplasia in anorexia nervosa. Virchows Arch 374:239-247, 1977
14. Williams WJ, Beutler E, Erslev AJ, Rundles RW: Hematology. McGraw-Hill Book Company, New York 1977, 2nd ed, pp. 461-465
15. Finkel HE, Mitus WJ: Gelatinous degeneration of the bone marrow. New York, Abstr XII Cong Internat Soc Hematol, 1965, p. 145
16 Seaman JP, Kjeldsberg CR, Linker A: Gelatinous transformation of the bone marrow. Human Pathol 9:685-692, 1978
17. Nelson WE, Vaughan VC, McKay RJ: Textbook of Pediatrics. W.B. Saunders Company, Philadelphia, 1969, 9th ed, p. 1043

# An Epidemiologic Review of Cancer in an Industrialized Connecticut Town

SUSAN T. GERSHMAN, M.S., M.P.H., RANDI S. MOST, M.P.H.,
JOHN N. LEWIS, M.D., M.P.H., AND JAMES S. MARKS, M.D., M.P.H.

**ABSTRACT—Suspicion of excess cancer cases near a large chemical factory led to this epidemiologic investigation of cancer in a suburban Connecticut town. Cancer mortality was examined for two time periods, 1969-71 and 1974-76, and morbidity for 1973-78. In addition, all cancer cases were plotted on a North Haven town map to observe whether any geographic clustering had occurred. Cancer mortality rates showed no significant excesses when compared with surrounding towns or the state. Cancer morbidity ratios for nineteen primary sites also showed no significant excesses. However, there were four sites that showed significantly fewer cases. In addition, no clustering was exhibited by cancer case mapping.**

**In conclusion, our data did not indicate that North Haven had higher cancer rates than neighboring towns. The small population and hence large standard errors seem to indicate that studies of this type may not be sensitive enough to detect the effects of low level carcinogens.**

---

SUSAN T. GERSHMAN, M.S., M.P.H., Epidemiology Consultant; RANDI S. MOST, M.P.H., Epidemiologist; JOHN N. LEWIS, M.D., M.P.H., Bureau Chief, Health Promotion and Disease Prevention; JAMES S. MARKS, M.D., M.P.H., Medical Consultant; all from the Connecticut State Department of Health Services, Hartford, CT.

## Introduction

Recent interest has focused on the potential health threat posed by chemical industries emitting benzene and other pollutants, into the environment. Suspicion of possible clustering of cancer cases in the vicinity of a large chemical factory in a suburban Connecticut town[1] led to this investigation, which examines the validity of these allegations.

An increased risk of leukemia has been observed among workers exposed to benzene.[2, 3, 4, 5] A report by Albert, et al estimated that the number of cases of acute myelogenous and monocytic leukemia expected per year in the U.S. population attributable to ambient atmospheric benzene (1.03 ppb) is between 34 and 235. This is between 0.23 - 1.62% of the total leukemia deaths in the United States based on 1973 vital statistics.[6] Such findings warrant further epidemiologic investigation of the health effects of industrial pollution on surrounding populations.

## Methodology

### Cancer Case Mapping:

A listing of cancer cases diagnosed in North Haven residents between 1973-1978 was obtained from the Connecticut State Tumor Registry. Street addresses were ascertained from individual Tumor Registry records. Each cancer case residence was located in North Haven and then indicated in its appropriate place on the town map. Persons diagnosed as having more than one primary site were only indicated once.

### Age-Adjusted Cancer Mortality:

Age-adjusted cancer mortality rates were provided by the Health Statistics Division of the Connecticut State Department of Health Services (unpublished data). These rates were examined for North Haven, the total State of Connecticut and five adjacent towns (East Haven, Hamden, North Branford, New Haven, Wallingford). The specific sites examined by sex and time period (1969-71 and 1974-76) were:

| *ICD Code* | *Primary Site* |
|---|---|
| 151 | malignant neoplasms of the stomach |
| 153 | malignant neoplasms of the large intestine (excluding rectum) |
| 162 | malignant neoplasms of the trachea, bronchus and lung |
| 174 | malignant neoplasms of the breast |
| 188 | malignant neoplasms of the bladder |
| 204-207 | all leukemias |
| 140-207 | all cancers |

### Standard Morbidity Ratios:

A listing of all cancer cases diagnosed in North Haven residents between 1973-1978 was obtained from the Connecticut Tumor Registry. To determine whether North Haven has a unique cancer experience nineteen primary sites were selected and compared to expected values based on Connecticut incidence rates. Only those specific ICD codes listed in North Haven were included in determining expected values. Expected cases were calculated using Connecticut incidence rates adjusted to the North Haven age distribution. The only reliable North Haven population estimate available (special estimate provided by Health Statistics Division) was for 1975, so Connecticut age-specific incidence rates for the same year were used. To obtain the number of cases expected in North Haven for the time span 1973-1978, the calculated 1975 expected value was multiplied by six.

Standard morbidity ratios were determined for males and females for each of the nineteen primary cancer sites. Standard errors were calculated for each, and a Z-test was then performed to obtain the P value for each site.

## Results

### Cancer Case Mapping:

Four hundred and fifty-five residences were identified and pinpointed on a North Haven map for the time span 1973-78. Fifteen residences could not be mapped due to unclear street numbers or streets that were not listed in the North Haven street index. No obvious clusters of cancer cases could be detected anywhere within the town. The cases appeared to be evenly dispersed.

### Age-Adjusted Cancer Mortality:

The age-adjusted cancer mortality rates for North Haven, East Haven, Hamden, North Branford, New Haven, Wallingford and the total State of Connecticut were reviewed. These results are presented in Table 1.

The North Haven cancer mortality rates are based on small numbers and consequently the standard errors are extremely large. Z-tests between North Haven rates and State rates showed no significant differences at $p=0.05$.

In comparing rates among North Haven and the five adjacent towns, North Haven had the highest rate for only two sites by sex (1974-76: stomach—females, bladder—males). North Branford and East Haven, by comparison, each had the highest rates for nine sites. This includes the highest rates of all cancers for males and females during both time periods.

In general, the rates have increased between the two time-periods reviewed. This is most likely a reflection of increased cancer incidence since the early 1970's. This is a national trend and not known to be related to a specific environmental factor.

### Standard Morbidity Ratios:

Standard morbidity ratios were calculated for 19 primary sites (Table 2). No significant excesses were found at $p=0.05$. There were four sites that showed significantly fewer cases than were expected:

large intestine ------------------------ females
kidney -------------------------------- females
genital -------------------------------- females
all cancers ---------------------------- females

Table 1

AGE-ADJUSTED CANCER MORTALITY BY SELECTED PRIMARY SITES, TOWNS, AND SEX FOR TWO TIME PERIODS, 1969-71 AND 1974-76

| | *Stomach* | | *Large Intestine** | | *Trachea, Bronchus, Lung* | | *Breast* |
|---|---|---|---|---|---|---|---|
| *Town* | *Male Rate** (S.E.)**** | *Female Rate (S.E.)* | *Male Rate (S.E.)* | *Female Rate (S.E.)* | *Male Rate (S.E.)* | *Female Rate (S.E.)* | *Female Rate (S.E.)* |
| EAST HAVEN | | | | | | | |
| 1969-71 | 10.16(10.25) | 6.82(8.35) | 11.82(11.82) | 18.21(12.90) | 35.70(19.02) | 9.96 (8.65) | 22.57(13.19) |
| 1974-76 | 19.38(14.36) | 8.09(8.09) | 34.96(19.58) | 24.14(14.10) | 88.30(30.59) | 24.02(13.94) | 56.72(21.28) |
| HAMDEN | | | | | | | |
| 1969-71 | 9.22 (6.05) | 4.72(3.65) | 32.65(11.36) | 31.36 (9.62) | 48.90(13.79) | 13.66 (6.32) | 25.42 (8.65) |
| 1974-76 | 11.84 (6.50) | 5.28(3.74) | 27.82(10.07) | 20.88 (7.61) | 69.33(15.84) | 11.68 (5.64) | 38.01(10.06) |
| NEW HAVEN | | | | | | | |
| 1969-71 | 15.53 (4.93) | 6.30(2.55) | 23.82 (6.10) | 15.42 (4.15) | 66.24(10.16) | 13.58 (4.09) | 29.09 (6.04) |
| 1974-76 | 10.29 (4.06) | 6.57(2.50) | 22.98 (5.92) | 18.26 (4.51) | 76.86(11.10) | 18.35 (4.84) | 36.09 (7.24) |
| NORTH BRANFORD | | | | | | | |
| 1969-71 | 33.92(36.67) | 0.00(0.00) | 27.85(34.13) | 25.35(31.28) | 45.46(38.42) | 4.54 (7.86) | 56.08(45.27) |
| 1974-76 | 22.46(29.12) | 0.00(0.00) | 26.00(34.75) | 76.15(53.04) | 63.36(57.46) | 0.00 (0.00) | 23.52(26.52) |
| NORTH HAVEN | | | | | | | |
| 1969-71 | 25.95(19.16) | 2.65(4.59) | 10.02(10.90) | 29.14(16.88) | 41.91(22.97) | 5.53 (6.91) | 49.31(20.43) |
| 1974-76 | 9.04(12.45) | 9.31(9.42) | 32.38(21.53) | 22.36(13.91) | 66.72(29.77) | 11.01 (8.56) | 33.09(16.11) |
| WALLINGFORD | | | | | | | |
| 1969-71 | 10.45 (9.09) | 4.20(4.20) | 35.69(16.19) | 18.77 (9.94) | 50.67(19.18) | 6.83 (6.04) | 21.20(10.74) |
| 1974-76 | 6.57 (6.68) | 3.33(4.09) | 23.96(12.63) | 8.48 (6.63) | 65.59(20.27) | 17.91 (9.86) | 30.50(12.51) |
| TOTAL STATE | | | | | | | |
| 1969-71 | 13.22 (1.03) | 5.76(0.57) | 22.58 (1.35) | 23.94 (1.35) | 55.86 (2.08) | 11.04 (0.81) | 29.81 (1.33) |
| 1974-76 | 11.56 (0.94) | 5.86(0.57) | 18.19 (1.03) | 19.95 (1.04) | 63.69 (2.15) | 16.43 (0.96) | 32.56 (1.35) |

| | *Bladder* | | *Leukemia* | | *All Cancers* | |
|---|---|---|---|---|---|---|
| *Town* | *Male Rate (S.E.)* | *Female Rate (S.E.)* | *Male Rate (S.E.)* | *Female Rate (S.E.)* | *Male Rate (S.E.)* | *Female Rate (S.E.)* |
| EAST HAVEN | | | | | | |
| 1969-71 | 6.09 (7.75) | 3.41 (5.91) | 18.68(14.64) | 11.22(9.79) | 173.32 (42.54) | 134.01(34.18) |
| 1974-76 | 9.69(10.15) | 0.00 (0.00) | 5.02 (6.18) | 5.41(9.79) | 272.26 (54.74) | 191.16(39.25) |
| HAMDEN | | | | | | |
| 1969-71 | 5.24 (4.55) | 1.94 (2.37) | 8.21 (5.81) | 3.54(3.65) | 196.33 (27.98) | 142.04(20.49) |
| 1974-76 | 15.10 (7.56) | 3.51 (3.04) | 9.57 (6.49) | 6.11(4.00) | 239.59 (29.70) | 140.45(19.43) |
| NEW HAVEN | | | | | | |
| 1969-71 | 7.52 (3.36) | 0.89 (0.89) | 10.17 (3.96) | 6.42(2.77) | 236.29 (19.18) | 145.49(13.09) |
| 1974-76 | 7.00 (3.25) | 3.34 (2.03) | 9.77 (3.92) | 4.51(2.66) | 247.36 (19.79) | 164.44(14.52) |
| NORTH BRANFORD | | | | | | |
| 1969-71 | 35.76(43.80) | 0.00 (0.00) | 5.09 (8.81) | 5.08(8.80) | 271.22(104.24) | 206.04(85.53) |
| 1974-76 | 0.00 (0.00) | 13.60(23.56) | 5.58 (9.67) | 5.35(9.28) | 210.77 (91.87) | 194.60(79.42) |
| NORTH HAVEN | | | | | | |
| 1969-71 | 10.70(13.10) | 0.00 (0.00) | 9.84(10.43) | 8.48(8.59) | 213.67 (52.84) | 169.19(37.82) |
| 1974-76 | 15.16(12.14) | 0.00 (0.00) | 9.14(12.50) | 11.04(9.75) | 236.83 (56.40) | 174.38(38.48) |
| WALLINGFORD | | | | | | |
| 1969-71 | 2.98 (5.16) | 1.97 (3.41) | 10.70 (9.32) | 7.13(6.27) | 229.05 (41.02) | 129.57(26.73) |
| 1974-76 | 9.27 (8.06) | 1.92 (3.33) | 13.58 (9.66) | 11.12(7.31) | 208.90 (36.93) | 150.62(27.99) |
| TOTAL STATE | | | | | | |
| 1969-71 | 7.38 (0.78) | 1.83 (0.32) | 9.14 (0.84) | 5.24(0.56) | 214.00 (4.10) | 138.18 (2.85) |
| 1974-76 | 8.89 (0.83) | 2.54 (0.37) | 9.25 (0.84) | 5.71(0.57) | 222.46 (4.06) | 151.10 (2.89) |

*excluding rectum
**age-adjusted mortality rate
***standard error

Table 2

OBSERVED TO EXPECTED RATIOS BY SELECTED PRIMARY SITES NORTH HAVEN 1973-1978

| *Primary Site* | *Observed* | *Expected* | *Ratio*** | *SE**** | *Z Value* | *P Value* |
|---|---|---|---|---|---|---|
| Esophagus | | | | | | |
| Male | 7 | 3.8 | 1.8 | 0.68 | 1.18 | .238 |
| Female | 1 | 1.4 | 0.7 | 0.70 | −0.43 | .667 |
| Stomach | | | | | | |
| Male | 4 | 5.7 | 0.7 | 0.35 | −0.86 | .390 |
| Female | 4 | 3.6 | 1.1 | 0.55 | −0.18 | .857 |
| Small Intestine | | | | | | |
| Male | 1 | 0.3 | 3.3 | 3.30 | 0.70 | .484 |
| Female | 0 | 0.4 | 0 | — | — | — |
| Large Intestine | | | | | | |
| Male | 27 | 23.4 | 1.2 | 0.23 | 0.87 | .384 |
| Female | 15 | 25.6 | 0.6 | 0.16 | −2.50 | .012* |
| Rectum | | | | | | |
| Male | 13 | 13.9 | 0.9 | 0.25 | −0.40 | .689 |
| Female | 17 | 12.5 | 1.4 | 0.34 | 1.18 | .238 |
| Liver | | | | | | |
| Male | 0 | 2.1 | 0 | — | — | — |
| Female | 5 | 1.3 | 3.8 | 1.70 | 1.65 | .099 |
| Pancreas | | | | | | |
| Male | 10 | 4.1 | 2.4 | 0.76 | 1.84 | .066 |
| Female | 9 | 6.1 | 1.5 | 0.50 | 1.00 | .317 |
| Larynx | | | | | | |
| Male | 7 | 6.4 | 1.1 | 0.42 | 0.24 | .810 |
| Female | 0 | 1.0 | 0 | — | — | — |
| Lung | | | | | | |
| Male | 40 | 47.7 | 0.8 | 0.13 | −1.54 | .124 |
| Female | 13 | 17.5 | 0.7 | 0.19 | −1.58 | .114 |
| Breast | | | | | | |
| Female | 70 | 80.0 | 0.9 | 0.11 | −0.93 | .352 |
| Kidney | | | | | | |
| Male | 8 | 6.8 | 1.2 | 0.42 | 0.47 | .638 |
| Female | 1 | 4.4 | 0.2 | 0.20 | −4.00 | <.003* |
| Genital | | | | | | |
| Male | 36 | 27.7 | 1.3 | 0.22 | 1.38 | .168 |
| Female | 45 | 68.5 | 0.6 | 0.90 | −4.47 | <.003* |
| Lymphatic | | | | | | |
| Male | 13 | 6.7 | 1.9 | 0.53 | 1.71 | .087 |
| Female | 9 | 7.8 | 1.2 | 0.40 | 0.50 | .617 |
| Myeloma | | | | | | |
| Male | 2 | 2.1 | 1.0 | 0.71 | — | — |
| Female | 2 | 2.0 | 1.0 | 0.71 | — | — |
| Leukemia | | | | | | |
| Male | 11 | 5.5 | 2.0 | 0.60 | 1.66 | .095 |
| Female | 4 | 3.5 | 1.1 | 0.55 | 0.18 | .857 |
| Bladder | | | | | | |
| Male | 11 | 18.1 | 0.6 | 0.18 | −2.21 | .026* |
| Female | 3 | 6.3 | 0.5 | 0.29 | −1.73 | .085 |
| Melanoma | | | | | | |
| Male | 6 | 5.0 | 1.2 | 0.49 | 0.41 | .682 |
| Female | 4 | 5.2 | 0.8 | 0.40 | −0.50 | .617 |
| Brain | | | | | | |
| Male | 5 | 4.1 | 1.2 | 0.54 | 0.37 | .711 |
| Female | 2 | 3.7 | 0.5 | 0.35 | −1.41 | .153 |
| Thyroid | | | | | | |
| Male | 2 | 1.2 | 1.7 | 1.20 | 0.58 | .562 |
| Female | 5 | 2.9 | 1.7 | 7.60 | −0.92 | .358 |
| Total | | | | | | |
| Male | 203 | 189.6 | 1.1 | 0.08 | 1.25 | .211 |
| Female | 209 | 253.7 | 0.8 | 0.06 | −3.33 | <.003* |

*significantly lower than expected

**number of observed cases divided by number of expected cases

***standard error

Standard morbidity ratios greater than two were noted as follows, although the observed numbers were small:

small intestine ---------------- male, females
liver --------------------------- females
pancreas ----------------------- male
leukemia --------------------- male

Residence and occupation were examined for these cancers. Neither geographic clustering nor any occupational pattern could be detected.

## Discussion

Although the majority of our findings proved to be negative, a study of this type must be viewed with caution. There are several inherent limitations involved in doing an epidemiologic study of this nature. First of all, when mapping cancer cases in North Haven, population density could not be accounted for at a specific place and time. Also, there are no available data which give an accurate account of North Haven's population mobility. Without personal interviews, therefore, there is no way to determine the length of residence for each cancer case diagnosed. Older individuals may retire outside of Connecticut, and their cancer may be diagnosed out of state.

It is extremely difficult to associate cancer incidence with environmental occurrences due to the long latency period involved. This is especially true in view of constantly changing industrial processes. In this case, a chemical plant located in North Haven is known to have produced benzidine from 1946-65. Benzidine is a known human bladder carcinogen[7, 8] and therefore, one might expect to find some increase in North Haven rates following the appropriate latency period of 15-20 years. Yet our data show a significant deficit of male bladder cancer between 1973-1978. This failure to detect an increase in risk may indicate that geographic proximity to the plant is not associated with significant exposure to benzidine. However, because of the small population available for study, a very large increase in risk would be necessary for a study of this nature to detect an increase as statistically significant. An example of the difficulties involved in monitoring small populations for changes in cancer risk is illustrated by our findings. In two instances (male-bladder, female-all cancers) mortality rates appeared to be higher in North Haven than in the state, yet morbidity ratios for these same sites showed significant deficits. This is most probably attributable to the large standard errors which must be taken into consideration when interpreting such data. The large standard errors which resulted from the small population being examined mean the suitability of this method of epidemiologic analysis must be seriously questioned when studying potential environmental carcinogens.

In addition, it is not possible to assess health effects other than cancer, since other chronic diseases are not reportable. It should also be noted that variables such as genetic factors, smoking, and occupation cannot be controlled in a study of this type.

## Conclusion and Recommendations

Analysis of these data has provided no convincing evidence that North Haven has had a cancer experience different from surrounding towns or from the State as a whole.

Our data seems to indicate that a more sensitive method of epidemiologic analysis should be derived in order to be able to detect the effects of low level carcinogens in a small population.

### ACKNOWLEDGEMENTS

The authors wish to express their appreciation to Dr. Colin White of Yale University for his statistical expertise. We would also like to thank our Health Statistics Division, especially Jack Flannery whose assistance with data sources was invaluable. Our appreciation is also extended to Dr. Steven Malish, Alan Siniscalchi, and George Curry of the Toxic Hazards Section for their technical assistance.

### REFERENCES

1. Blumenkrantz P: North Haven Probes Cancer Death Areas, New Haven Register, June 22, 1979, page 1
2. Vigliani EC and Forni A: Benzene and Leukemia, Environ Res 11:122-27, 1976
3. Infante PF, Rinsky, RA, Wagoner JK and Young RI: Leukemia Among Workers Exposed to Benzene, NIOSH, April 26, 1979
4. Vigliani EC and Saita G: Benzene and Leukemia, N Eng J Med 271:872-76, 1964
5. Aksoy M, Dincol K, Erdem S and Dincol G: Acute Leukemia Due to Chronic Exposure to Benzene, Am J Med 52:160-66, 1972
6. Albert RE: Carcinogenic Assessment Group's Final Report on Population Risk to Ambient Benzene Exposure, EPA, Sept. 12, 1978
7. Case RAM, Hosker ME, McDonald DB, Pearson JT: Tumors of the Urinary Bladder in Workmen Engaged in the Manufacture and Use of Certain Dyestuff Intermediates in the British Chemical Industry. Part I. The Role of Aniline, Benzidine, Alpha-Naphthylamine and Beta-Naphthylamine, Br J Ind Med 11:75-104, 1954
8. Hueper, WC: Occupational and Environmental Cancer of the Urinary System, Yale University Press, 1969

**Yours Truly™ by Jobst® — it's only natural.**

Finally, a truly natural external breast prosthesis is available to your patients. No need to follow the trauma of a radical mastectomy and associated psychological overlay with an ugly, even grotesque breast prosthesis of unnatural polyvinyl chloride.

Now, with the help of your nurse, Reach to Recovery volunteers, and others, you can suggest to your postmastectomy patients an external breast form that is seamless and natural. The Yours Truly™ breast form is new. Worn right against the skin it requires no special bra to stay in place. It moves with the vitality and flow of a natural breast. The silicone gel inside has a specific gravity of .98, only .04 more dense than human breast tissue and the response in vivo is nearly identical. There are thirteen sizes from which to choose, each with the contour and suppleness of the female breast size it replaces.

**Contact your local Jobst Service Center for complete details.**

® JOBST HARTFORD SERVICE CENTER

The Hartford Medical Arts Building
100 Retreat Ave. (Suite 105)
Hartford, Connecticut 06106
Telephone (203) 246-1668

# Nurse-Physician Collaboration

HUBERT A. RITTER, M.D.

The history of physicians and nurses working together goes back through the ages. During the past decade there has been increasing awareness among physicians and nurses of a growing interest in "Joint Practice" in hospital settings, as well as in ambulatory care. Many see this as a *new* relationship between the physician and the nurse giving primary nursing care—a collaborative, collegial relationship. Many physicians see primary nursing in the collaborative practice relationship as going back to the days when we all knew who was the patient's nurse—before she left the bedside for an administrative role or began to delegate patient care to a team for which she was responsible. Physicians in some hospital settings believe that joint practice as a collaborative approach to patient care has always been a characteristic of *their* practice.

In the early 1950s hospitals were in a state of transition. The patient saw little of the professional nurse. Large segments of patient care were taken over by non-professional personnel. Nurses were climbing the ladder of success *away* from the patient and into administration and teaching positions. Nurses and their employers saw the future of nursing largely in the context of supervisory and management fuctions.

In 1961 the Surgeon General appointed a consultative group in nursing to advise him on nursing needs. The group's report, *Toward Quality in Nursing*, commented on changes in medical practice, the delegation of increased responsibilities to the professional nurse, and the expectation that she would increasingly use independent judgment in meeting her responsibilities.

An outgrowth of this study was the formation of the National Commission for the Study of Nursing and Nursing Education in the United States in 1967. The Commission's final report was published in 1970. Although it was titled, *An Abstract for Action*, it was known as the Lysaught Report because of the Commission's Director, Dr. Jerome P. Lysaught of the University of Rochester. The report recommended that nursing reestablish *practice* as the primary focus of nursing as a profession. Lysaught commented on "the reciprocal roles of nurses and physicians undergoing basic changes." He wrote of congruent roles and proposed that medicine and nursing work out their mutual role relationships through joint discussion. One of his central recommendations was the establishing of a "National Joint Practice Commission with state counterpart committees to discuss and make recommendations concerning congruent roles . . ." and thus the term "joint practice" moved into the limelight.

In this same year the AMA published its position statement, "Medicine and Nursing in the 1970s." In this document AMA recognized the need for the expansion of the role of the nurse in providing patient care and proposed to facilitate it. AMA accepted the concept that "the delivery of medical care is, by its nature, a team operation and constructive collaboration of medicine with the various elements of the nursing profession is essential."

Also, in 1970, the concept of the primary-role difference between medicine and nursing was proposed: medicine's role comprising diagnosis and treatment—the *cure* process; and nursing's comprising helping, comforting, and guiding—the *care* process. Physicians were unhappy with this differentiation since they considered both as part of their practice. Nurses accepted this dual emphasis but many wished to encompass the cure process also in their practice. Many writers emphasized that neither role is exclusive. Barbara Bates, M.D., writing in the New England Journal of Medicine,[1] espouses this concept of the two roles. She remarks that "in some specialty areas, by virtue of a continuing relation, specialized knowledge, shared goals and mutual respect, the physician and nurse form a successful team in health care."

Physicians and nurses have recognized for decades that collaboration between the two professions results in better care. There had been no formal effort to

---

HUBERT A. RITTER, M.D., practices obstetrics and gynecology, St. Louis, Missouri. Dr. Ritter is a trustee of the American Medical Association.

expand this relationship, to identify and formalize it, until the National Joint Practice Commission was established in 1971 in response to the recommendations of the National Commission for the Study of Nursing and Nursing Education. Sixteen commissioners, a majority of whom are practitioners, equally represent medicine and nursing. The Commission proposed to study and make recommendations concerning related roles in providing quality health care. One of its first efforts was to define "joint practice." The Commission stated that "joint practice is nurses and physicians collaborating to provide patient care," and published a statement, "The Definition of Joint or Collaborative Practice in Hospitals," defining the elements of this relationship.

In August 1977, the National Joint Practice Commission received a grant from W.K. Kellogg Foundation for the purpose of demonstrating collaborative or joint practice in hospitals. Five elements of joint practice were included in this project: 1) primary nursing—the National Joint Practice Commission proposes that only those nurses individually responsible for the patient's comprehensive nursing care are able to participate in collaborative practice, 2) clinical decision-making by nurses within the scope of nursing practice as defined within the hospital, 3) the integrated patient record as a formal means of nurse-physician communication in the care of patients, 4) joint patient care review, and 5) a joint practice committee to monitor this relationship and recommend appropriate actions supporting joint practice.

The reports from this project are encouraging. It is demonstrating improvement in patient care in a setting where a complementary relation exists between physicians and nurses. Mutual respect for the competence of physicians and nurses has grown as lines of communication have become operational.

But what is the *national* picture on progress to date on recommendations made by the National Commission for the Study of Nursing and Nursing Education? In August 1978, an article appeared in *Hospitals*[2] reportiing on replies from 185 nursing-service administrators responding to a questionnaire. Eighty-seven (47%) reported that joint practice committees had been established in their hospitals. Some reported strong physician resistance to "organized collaboration." Sixty-two percent replied that "physicians and nurses were restructuring their roles in congruent fashion to enhance patient care," and significant improvements in practitioner relation were noted.

Seventy-two percent of the respondents reported a significant increase in nursing time spent on clinical functions. They attribute this to "educational change in emphasis, the patients' rights movement, concern over malpractice, and the developement and implementation of improved standards of care."

If physician-nurse collaboration could be improved in *your* hospital, you might ask if you have a compatible setting for joint practice. What are the essential elements?

1) What are the present working-relationships of physicians and nurses? Is there willingness to collaborate in patient care? Do they accept each other as professionals with a common goal and unique competencies?
2) Does hospital administration totally support quality patient care above other considerations, and does it accept the physician/nurse team as the principal care providers? Will it support change essential to more collaborative practice?
3) Is the nursing staff clinically competent and secure in making appropriate decisions and consulting with the medical staff?
4) Does the medical staff communicate and consult with the nursing staff and accept a collegial relationship with the clinically competent nurse?
5) Is your hospital committed to primary nursing? Can the physician as readily identify his patient's nurse as the nurse can identify her patient's doctor?
6) Is clinical excellence of nurses rewarded?

If your answers are "yes," you are well on the road to collaborative practice. If you wish to facilitate this mode of care for your patients or want to develop this further, what can you do?

As in the National Joint Practice Commission's hospital demonstration-project, instituting primary nursing is the first step to joint practice. Physicians and nurses must be caring for the same patients.

Assuring the competence of nurses by improved education and training is an essential step to a collegial relationship. Clinical competence by physicians and nurses is essential for a trusting relationship and a productive communication. As the nurse demonstrates knowledge, trust develops. There is a sound base on which to reach agreement on their scope of practice, especially when that practice for nurses includes tasks not commonly accepted as nursing practice.

Providing a forum in which practicing physicians and nurses discuss and decide on the scope of medical and nursing practice for that hospital is basic to acceptable congruent roles.

Planned communication between physicians and nurses—in rounds, formal or informal conferences, and consultations—provides a structure for joint planing for patient care and joint evaluation of care outcomes. This requires adjustment of schedules so that both are available for these encounters.

As communication improves, nurses can augment the physician's understanding of the dimensions of nursing care. The physician can contribute by informal instruction to the clinical competence of nurses. Improved patient care must result.

To test the proposals as mentioned above, we have established four demonstration projects. Each is on a unit of approximately 36 to 40 patients. Each unit is different: One is a surgical unit in a 68-bed hospital in Maine. Another is a medical oncology unit in a university hospital in New York City. A third is a gyn unit in a 500-bed community teaching hospital in Tulsa. And a fourth is a med-surg ward in a 350-bed community hospital in Sacramento.

These institutions were chosen because they were attempting to implement primary nursing and none of the commissioners was affiliated with them. We feel they are representatives of health care delivery in hospitals across the nation.

At this time, the data that have been accumulated is being subject to analysis by experts in areas as diverse as sociology and accounting.

In February 1980, six representatives from each of these hospitals, along with representatives of The Kellogg Foundation, The American Hospital Association, and members of the commission gathered three days to exchange information that at this point in time seemed valid.

The results were most enlightening. Presently we can say without question certain facts have been established by this method of patient care:

1) Preliminary evidence showed that hospital stay is reduced—daily cost is slightly increased, but this is more than offset by the reduced decline in patient stay.
2) Patient identification of his or her nurse—thereby better patient rapport: as a result, better patient care.
3) Less error in patient care.
4) Better record keeping.
5) Less litigation because of better rapport, less error, and better record keeping.
6) Less nurse turnover.
7) Better satisfaction of job fulfillment by nurse and physicians.
8) Other areas of these hospitals as well as other area hospitals are replicating collaborative practice at the request of *physicians.*
9) More problems are being solved at the ward level, thereby relieving administration of tedious detail.

### REFERENCES

1. Bates Barbara, MD, Doctor and Nurse: Changing Roles and Relations. The New England Journal of Medicine, July 16, 1970
2. Lysuaght Jerome P et al: Progress in Professional Service: Nurse Leaders Queried, *Hospitals,* August 16, 1978

**ELMCREST**

**A COMPREHENSIVE MENTAL HEALTH TREATMENT CENTER FOR ADULTS AND ADOLESCENTS**

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**
**Allen Cohen,** M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman,** M.D., F.A.P.A.
*Medical Director*
**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
☐ GERIATRIC GUIDANCE CENTER
☐ DAY HOSPITAL

epi

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

**FOR STRESS PATIENTS**
(Chronically Ill, Postoperative, Infection, Inadequate Diet, Alcoholism, Surgery, Burns, Fractures, Febrile Illness, G.I. Disorder, Diabetes, Pregnancy and Lactation)

# ON B.I.D. DOSAGE... ONLY ONE B-COMPLEX WITH C PROVIDES A SMOOTH, CONTINUOUS, PREDICTABLE RATE OF RELEASE THROUGH MICRO-DIALYSIS DIFFUSION 24 HOURS A DAY

# B-C-BID Capsules

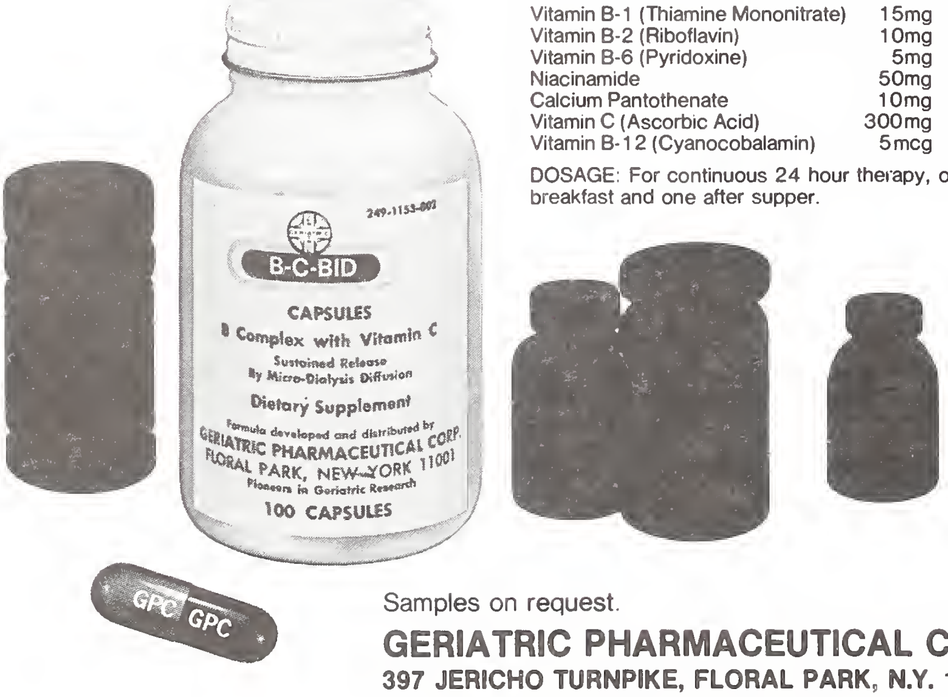
## B COMPLEX WITH C

For stress situations, good nutrition or whenever B-Complex with C is indicated...B-C-Bid is better. Its exclusive delivery system (sustained release through micro-dialysis diffusion) provides a smooth, continuous release of essential vitamins which frees your patients from the "peak and valley" effect of ordinary capsules or tablets...without regurgitation or after-taste.

Your patients deserve the predictability that only B-C-Bid can offer. The clinical results suggest that you prescribe it.

| EACH B-C-BID CAPSULE CONTAINS: | |
|---|---|
| Vitamin B-1 (Thiamine Mononitrate) | 15mg |
| Vitamin B-2 (Riboflavin) | 10mg |
| Vitamin B-6 (Pyridoxine) | 5mg |
| Niacinamide | 50mg |
| Calcium Pantothenate | 10mg |
| Vitamin C (Ascorbic Acid) | 300mg |
| Vitamin B-12 (Cyanocobalamin) | 5mcg |

DOSAGE: For continuous 24 hour therapy, one capsule after breakfast and one after supper.


249-1153-002
B-C-BID
CAPSULES
B Complex with Vitamin C
Sustained Release
By Micro-Dialysis Diffusion
Dietary Supplement
Formula developed and distributed by
GERIATRIC PHARMACEUTICAL CORP.
FLORAL PARK, NEW YORK 11001
Pioneers in Geriatric Research
100 CAPSULES
GPC GPC

Samples on request.

**GERIATRIC PHARMACEUTICAL CORP.**
**397 JERICHO TURNPIKE, FLORAL PARK, N.Y. 11001**

PIONEERS IN GERIATRIC RESEARCH
DEVELOPERS AND SUPPLIERS OF CEVI-BID • GER-O-FOAM • ISO-BID

**AVAILABLE ONLY THROUGH THE MEDICAL PROFESSION**

# The "Exceptions" to Informed Consent

(First of Two Parts)

ALAN MEISEL, J.D.

## Part I: The Exceptions

### Summary

**Professor Meisel, in the first part of this two-part article, briefly discusses what the informed consent doctrine requires of physicians, and then focuses on the "exceptions" to these requirements. He also discusses how these four exceptions—the emergency exception, the incompetency exception, waiver, and the therapeutic privilege—reconcile the competing social values of individualism and health. In the second part of this article, the consequence of invoking an exception will be addressed.**

### Introduction

Since its enunciation over 2 decades ago,[1] the doctrine of informed consent has spawned controversy in the courts, among legal scholars, and within the medical profession, and is a major source of antagonism between doctors and lawyers. While the doctrine has been condemned by the medical profession as a "myth" and a "fiction," it has been generally praised by legal scholars for promoting significant individual rights. The proponents contend that informed consent is the guardian of individualism in the medical context: it protects the patient's right to determine his own destiny; it guards against overreaching on the part of the physician; and it protects the patient's physical and psychic integrity.[2] The opponents insist that by promoting these individualistic values, the doctrine undermines significant competing values. It wastes valuable time that could be spent on treatment[3] because patients do not understand what they are told[4] and because they do not want to be informed;[5] it undermines the trust which patients need to repose in their doctors if they are to be successfully treated; and it requires disclosure of information about the risks and perhaps even the failure of a treatment, which may lead to a psychologically induced self-fulfilling prophecy.[6]

In this article I will show how in theory—through the exceptions that have developed to informed consent—the doctrine allocates decisional authority between the doctor and the patient, thereby reflecting competing social values and striking a balance between them. I will also discuss how in practice the allocation of authority and the balance of values often diverge from the theoretical norm and show what may be done to approximate more closely the proper theoretical balance.

### The Competing Values in Medical Decisionmaking

Informed consent is a highly individualistic doctrine permitting the patient to chart his own destiny in medical matters. However, the medical care which an individual receives or rejects affects persons other than the patient who may have an interest in the health of the patient.

#### (1) *The Interests of the Individual*

Prior to the adoption of the doctrine of informed consent, the patient's mere consent to treatment was adequate to authorize a physician to treat. Now, however, the physician must obtain the patient's "informed" consent to treatment. There is, in other words, not merely a duty to obtain consent, but also a duty to make disclosure.[7] In theory, then the doctrine has transformed the medical decisionmaking process from a "consensual" one in which the doctor proposes and the patient assents (or possibly refuses) into a "participatory" one.[8]

The interests of the individual are both procedural and substantive in nature. Individualism in the procedural sense refers to the interest that persons have in making decisions about their own destiny whether in medical matters or in other aspects of human activity. In the substantive sense, individualism encompasses

---

ALAN MEISEL, J.D., Associate Professor of Law and Psychiatry, University of Pittsburgh, Schools of Law and Medicine, Pittsburgh, PA. (Western Psychiatric Institute and Clinic). Copyright 1981 by Alan Meisel.

such interests as privacy and bodily and psychic integrity—interests always implicated in the administration of medical treatment.

(2) *The Interests of Others*

Unfettered individualism has never been the norm in any area of human activity. There have always been competing values to which society has given expression through law and other social institutions. In the informed consent doctrine these competing social values—which I will refer to collectively under the rubric of "health"—are primarily substantive, and to a lesser extent procedural. The substantive concern is with the promotion of health and with assuring that decisions are made that will prefer health over sickness. The substantive interest has three components: (1) the interests of family and friends in an individual's health; (2) the interests of society in the health of the individual; and (3) the interests of the health professions.

Close family members and friends may be dependent upon the individual for both their emotional and material well-being. To the extent that the patient's choice incurs expenses that others must bear, they will be impoverished materially and/or emotionally by his choice.

The interests of society in health are given primary effect through various governmental actions. These actions may be directed at promoting the general health of the community (e.g., public water fluoridation), protection of the interests of the individual himself (e.g., involuntary civil commitment of the mentally disabled who are dangerous only to themselves), or protection of the interests of others (e.g., compulsory vaccination against contagious disease).

The interests of the health professions tend to reinforce the general societal interest in health[9] because values of the professions support the view that medical decisionmaking is properly the responsibility of the physician rather than the patient. First, it is said, there are certain characteristics of being a patient—that is, being ill or injured—which militate against self-determination.[10] Second, the relevant information necessary to make the medical decision is not something which can be easily transmitted to the patient in the nontechnical terms required by the law of informed consent.[11] Finally, the physician has been trained to make the very decisions about medical care which the doctrine of informed consent seeks to place in hands of the patient.[12]

The procedural aspect of the societal interest in health concerns the identity of the person who is empowered to make decisions about medical care. To the extent that the substantive interest in health is to be furthered, decisions about medical care should be made by those who are experts in substantive medical matters and who are less likely to take into consideration matters unrelated, or at best peripheral, to the substance of medical care.

### The Reconciliation of Individualism and Health: Exceptions to Doctrine of Informed Consent

The doctrine of informed consent seeks to accommodate both the interests in individualism and in health. While the doctrine rests on the presumption that primary decisional authority belongs to the patient, societal interests in health are given effect both through certain rules for recovery and through several exceptions to the applicability of the informed consent requirement itself.

Informed consent requires that before treating a patient, the doctor obtain the patient's consent to treatment after making certain disclosures of information. The requisite disclosures include what the proposed treatment involves, the probability of its success, the nature of any known (or reasonably knowable) side effects and the probability of their occurrence, as well as the possibility of any alternative forms of treatment.

Several of the rules governing a patient's right to recover for lack of informed consent reflect a societal concern for health. For instance, the mere failure to inform a patient about a particular risk will not impose liability on a doctor. That risk must actually befall the patient in order for the patient to recover from the doctor. Also, the "objective test" of causation permits a patient to recover even for a materialized risk *only* if the jury finds that a reasonable person (as opposed to the patient himself) would have refused treatment if properly informed. Finally, many jurisdictions have adopted a "professional standard" of disclosure by which the custom of the medical profession is the standard against which the adequacy of disclosure is measured.

Societal concerns for health are also reflected in the several recognized exceptions to the informed consent doctrine. These exceptions, once properly invoked, shift all or part of the decisional authority from the patient to someone else.

(1) *The Emergency Exception*

As a general rule, in an "emergency" a doctor may render treatment without the patient's informed consent.[13] It is often stated that the rationale for this exception is that the patient's consent is "implied" in an emergency. Since a reasonable person would consent to treatment in an emergency if her were able to do so, it is presumed that any particular patient would consent under the same circumstances.[14] The effect of the emergency exception on the balance between individualism and health depends largely on how an emergency is defined.

The cases dealing with the emergency exception, when they provide any definition of emergency at all, reflect the various points on a hypothetical definitional spectrum. At one extreme, an emergency has been said to exist when the patient is

> injured to the extent of rendering him unconscious, and his injuries were of such a nature as to

> require prompt surgical attention, [and] a physician called to attend him would be justified in applying such medical or surgical treatment as might reasonably be necessary for the preservation of his life or limb . . . .[15]

At the other extreme, the failure to obtain consent has been excused because an emergency was found to exist merely when "suffering or pain [would] be alleviated" by treatment.[16] The way in which an emergency should be defined should take into consideration the extent to which the abandonment or relaxation of the requirements of informed consent undermines the values which the doctrine promotes, and the degree to which loosening of the informed consent requirements promotes the competing value of health.

The emergency exception should ordinarily suspend the doctor's duty to make disclosure, for this is the part of the informed consent requirement which is most time consuming except in the simplest of cases, and is therefore most likely to cause delay detrimental to the patient's health. Moreover, in those emergencies in which the patient is also unconscious, disclosure to the patient is a meaningless gesture.

It is not as clear, however, that the emergency exception should always suspend the obligation to obtain the patient's consent. Situations exist which are so urgent that full disclosure would be counterproductive, but which are not so urgent that the patient's consent, possibly following a highly abbreviated disclosure, could not be obtained. In many emergencies, however—certainly where the patient is unconscious, and probably where time is of such essence that there will be a grave threat to the patient's life or health if the time is taken to obtain consent—the consent requirement should also be suspended.

### *(2) Incompetency*

It has been recognized since the earliest cases dealing with consent to medical treatment that certain individuals are "incompetent" to make medical decisions, and that consequently they may be treated without their consent.[17] The alternative to treatment without the patient's consent would be no treatment at all, a result that would make a fetish of self-determination. Therefore, the exception to informed consent for incompetent persons tempers the emphasis on individualism and promotes health.

As with the emergency exception, however, the key question is how incompetency is defined. There are several different ways in which the determination of incompetency has been approached in court decisions, statutes, administrative regulations, and scholarly commentary.[18]

One view of incompetency focuses on the mere *presence* (or absence) of a decision by the patient. That is, the patient who chooses one treatment rather than another, or no treatment at all, is deemed competent without regard to the manner in which the choice was made and without regard to the nature of the choice itself. On the other hand, a patient who, when asked to decide, does not do so is deemed incompetent.[19] The "presence of decision" test is at the individualistic end of the spectrum of possible tests of incompetency.

Another view of incompetency focuses on the nature of the decisionmaking process that the patient utilizes. After the patient is provided with the legally required information, inquiry is made into the *manner* in which he makes his decision concerning treatment. A patient who gives "unsound" reasons for consenting to or refusing treatment might be viewed as incompetent.[20] This approach is more deferential to health values.

Rather than focusing on the manner in which the patient makes the treatment decision, a third alternative is to examine the nature of the decision itself. For example, we could determine that any patient is incompetent who chooses no treatment over treatment, or a risky treatment over a less risky one. Such a test makes the *outcome* of the decisionmaking process determinative of whether or not the patient is competent to participate in that process and thoroughly undermines the self-determinative rationale of informed consent.

Competency could also be viewed as a shorthand phrase for the patient's actual *understanding* of the information required to be disclosed by the informed consent doctrine. If the patient "knows," "appreciates" or "comprehends" the disclosed information, he is competent. No inquiry is made into how he arrives at his ultimate treatment decision nor of the nature of the decision itself.[21] Here the personal identity and professional allegiance of the one who assesses the patient's understanding play an extremely influential role in determining whether the patient is competent.

A fifth, and totally different approach, is that of general *incompetency*. This focuses on certain qualities of the person whose competency is in question as a *person*, rather than as a *patient*. For example, an individual whose overall functioning is impaired by permanent conditions such as severe mental retardation, or by temporary conditions such as alcohol or drug intoxication could be viewed as incompetent. The value of the concept of general incompetency is that it alerts the physician to the fact that the patient may be specifically incompetent. The problems with a general incompetency test, however, are twofold. First there may be little correspondence between a determination of general incompetency and a patient's ability to participate in specific medical decisionmaking, and second the test must be applied either mechanically or subjectively. While the mechanical approach would deem incompetent any individual who could reasonably be characterized as, for example, drunk or psychotic, the subjective approach relies on the personal standards of the evaluator. In either case, it is uncertain that individualistic values will be given their proper weight.

*(3) Waiver*

Another exception to the requirement of informed consent is waiver. A very small number of cases[22] and a few statutes[23] have acknowledged that a patient may surrender his right to give an informed consent to treatment. The statutes and the cases to date, however, do little more than recognize the existence of waiver, leaving for the future some important problems of definition and application. The unanswered questions include the necessary elements of the waiver exception, whether the doctor must inform the patient of his right of waiver, and what constitutes a coerced waiver.

Although the courts have not defined the elements of waiver in the context of informed consent, reasoning by analogy from other areas of the law in which waiver of individual rights has been in issue leads to a fairly certain conclusion as to what constitutes a valid waiver of informed consent. For at least 4 decades, the Supreme Court has defined a waiver as a voluntary and intentional relinquishment of a known right.[24] While, according to this definition, the patient must *know* that he has the right to give informed consent before he can waive it, it is not clear that the doctor has the legal duty to inform the patient of this right. To impose such a duty would tend to place the doctor in the role of policeman and undercut the trust necessary for a successful doctor-patient relationship.

The question of whether the physician has an obligation to tell the patient of his rights to informed consent raises the related question of whether there is an obligation upon the physician to inform the patient of his right *not* to be informed or *not* to decide—i.e., his right to waive. While there should be no absolute obligation to inform the patient of his right to waive, a conditional obligation ought to arise if the patient expresses a desire not to participate in the decisionmaking process. That is, if the patient demonstrates a desire to relinquish his rights, the doctor should be obligated to ascertain whether the patient knows that it is a *right* that he is relinquishing, and not merely a matter of grace bestowed by the physician.

The issue of voluntariness in the context of informed consent has, likewise, not been given firm judicial definition. While a waiver would certainly not be voluntary if it were the product of physical coercion, a more plausible situation might involve a physician's material misrepresentation of a fact to the patient. If such misrepresentation concerns either the existence of the patient's right to informed consent or the risks or benefits of or alternatives to the proposed treatment and if such misrepresentation induces the patient to relinquish his rights, then the relinquishment should not be considered voluntary.

The impact of the waiver exception is that if a waiver is properly obtained the patient remains the ultimate decisionmaker, but the content of his decision is shifted from the decisional level to the metadecisional level—from the equivalent of "I want this treatment (or that treatment or no treatment)" to "I don't want any information about the treatment." Waiver thus permits the patient to be treated without participating in the medical decisionmaking process, or at least without fully participating. The patient should be able to waive either or both of the duties imposed upon the physician. He should be able to give up the right to information without relinquishing the right to decide ("waiver of information"). Or he might decide that he wishes to be informed about treatment, but does not wish to make the ultimate decision ("waiver of decision"). Or finally he might determine that he wishes neither to be informed nor to decide.

Waiver permits the patient to be protected from any harmful impact which *he* believes disclosure might make upon him or from the possible anxiety which may accompany the decisionmaking process. However, unlike the case of the therapeutic privilege—which will be discussed next—it is the *patient* rather than the doctor who determines that disclosure or decisionmaking will be harmful to him.

*(4) Therapeutic Privilege*

It is well established that the physician may, in appropriate circumstances, be excused from compliance with the requirements of informed consent by the "therapeutic privilege," which permits the physician to refrain from disclosure which will seriously upset the patient.[25] Of all the exceptions to the informed consent doctrine, this is the best known and most discussed.

Its intended function is to "[free] physicians from a legal requirement which would force them to violate their 'primary duty' to do what is beneficial for the patient."[26] In practice, however, the privilege may legitimate a physician's natural aversion to disclosing unpleasant information to patients. Therefore, if the privilege is not severely circumscribed in its scope, it threatens to swallow the general obligation of disclosure, thereby depriving the patient of all decisional authority. The more restrictively the privilege is framed, the more consonant it is with the individualistic values which underlie the informed consent doctrine itself.

In the landmark informed consent case of *Canterbury v. Spence,*[27] the formulation of the privilege indicates that it is primarily, if not exclusively, information about the *risks* of treatment which may be withheld—although if the disclosure of information about the benefits of treatment or the alternative forms of treatment would upset the patient, it is reasonable that their disclosure should be dispensed with too. Whether or not the privilege contemplates that both the duty of disclosure and the duty of obtaining the patient's consent are suspended is not clear. The court's discussion seems to imply that the doctor is obligated to disclose all other relevant information and to obtain the patient's consent as well.

## Summary and Conclusion

A physician may be relieved of the legal obligation of obtaining informed consent in an emergency, if the patient is incompetent, if the patient waives his right to render an informed consent, or if disclosure to the patient would be harmful. There has been a great deal of inconsistency and looseness in both the courts and the legislatures in formulating the boundaries of these requirements, so that it is difficult to know the circumstances under which a particular exception is properly invoked. Courts should, in the formulation of these exceptions, and doctors should, in the application of the exceptions, keep in mind that the exceptions represent an effort to reconcile important competing values of health and individualism. Exceptions broadly formulated or applied deny patients the right to chart, in cooperation with the physician, their own medical course; exceptions too narrowly formulated or applied may deny needed medical care, or may deny its expeditious rendition.

Even if the exceptions are formulated and applied so as to accord respect to both social values, there remains an important unanswered question: who is to assume the role of decisionmaker which the patient no longer fulfills? This subject, involving the issue of proxy decisionmaking, will be discussed in the next part of this article.

ACKNOWLEDGEMENT

This is an abridged version of an article which originally appeared in the Wisconsin Law Review, vol. 1979, pages 413-485. I am deeply indebted to James L. Flannery, a second-year student at the University of Pittsburgh School of Law, for his substantial editorial assistance in the preparation of this article. This work has been supported in part by PHS Research Grant No. MH27553, NIHM Center for Studies of Crime and Delinquency and Mental Health Services Development Branch.

### REFERENCES

1. *See,* Salgo v. Leland Stanford Jr. Univ. Bd. of Trustees, 154 Cal. App. 2d 560, 317 P.2d 170 (1957). For a discussion of the origins of the informed consent doctrine, *see* Meisel, *The Expansion of Liability for Medical Accidents: From Negligence to Strict Liability by Way of Informed Consent,* 56 NEB. L. REV. 51, 77-86 (1977) [hereinafter cited as Meisel].
2. J. KATZ, EXPERIMENTATION WITH HUMAN BEINGS 540-88 (1972); J. KATZ & A. CAPRON, CATASTROPHIC DISEASES: WHO DECIDES WHAT? 82-90 (1975); P. RAMSEY, THE PATIENT AS PERSON 1-58 (1970); Capron, *Informed Consent in Catastrophic Disease Research and Treatment,* 123 U. PA. L. REV. 340, 364-71 (1974) [hereinafter cited as Capron]; Note, *Informed Consent and the Dying Patient,* 83 YALE L.J. 1632, 1643-47 (1974).
3. DeMere, *The Plastic Surgeon and Legal Matters,* 1975 LEGAL MED. ANN. 291, 294 (C. Wecht ed. 1976); Demy, *Informed Opinion on Informed Consent,* 217 J.A.M.A. 696 (1971).
4. Oppenheim, *Informed Consent to Medical Treatment,* 11 CLEV. - MAR. L. REV. 249, 261 (1962). Some take the existential position that the patient can never truly comprehend what a procedure entails until he has experienced it. *See, e.g.,* Ingelfinger, *Informed (but Uneducated) Consent,* 287 NEW ENG. J. MED. 465, 465 (1972). If it is true that patients do not understand what they are told, a likely explanation in many cases is that the manner of disclosure is too complex. *See, e.g.,* Roberts v. Woods, 206 F. Supp. 579, 583 (S.D. Ala. 1962).
5. Alfidi, *Controversy, Alternatives, and Decisions in Complying with the Legal Doctrine of Informed Consent,* 114 RADIOLOGY 231, 233 (1975).
6. Katz, *Informed Consent—A Fairy Tale? Law's Vision,* 39 U. PITT. L. REV. 137, 177 (1977).
7. There is some question as to whether the patient must be "informed" in the sense that adequate information must have been imparted to him by the physician, or in the sense that he must understand the information that has been imparted. *See* Meisel, *supra* note 1, at 113-23.
8. *See, e.g.,* Szasz & Hollender, *A Contribution to the Philosophy of Medicine—The Basic Models of the Doctor-Patient Relationship,* 97 ARCH. INT. MED. 585 (1965); Note, *Restructuring Informed Consent: Legal Therapy for the Doctor-Patient Relationship,* 79 YALE L.J. 1533, 1534-35 & *passim* (1970) [hereinafter cited as Note, *Restructuring Informed Consent*].
9. *See, e.g.,* Superintendent of Belchertown State School v. Saikewicz, 370 N.E. 2d 417 (Mass. 1977).
10. Natanson v. Kline, 186 Kan. 393, 406, 350 P. 2d 1093, 1104 (1960).
11. Cobbs v. Grant, 8 Cal. 3d 229, 244, 502 P. 2d 1,11 (1972).
12. Becker, *The Nature of a Profession, in* THE SIXTY-FIRST YEARBOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION, pt. II at 38-39 (W. Henry ed. 1962).
13. 2 D. LOUISELL & H. WILLIAMS, MEDICAL MALPRACTICE, ¶ 22.01, at 594.43 (1977).
14. W. PROSSER, HANDBOOK OF THE LAW OF TORTS § 18 (4th ed. 1971).
15. Mohr v. Williams, 95 Minn. 261, 269, 104 N.W. 12, 15 (1905). Even where an emergency is stringently defined, it may be applied in such a way as to undermine the stringency of definition. *See, e.g.,* Dunham v. Wright, 423 F. 2d 940, 947 (3d Cir. 1970).
16. Sullivan v. Montgomery, 155 Misc. 448, 279 N.Y.S. 575 (City Ct. 1935).
17. *See, e.g.,* Pratt v. Davis, 118 Ill. App. 161, 168, 174-75 (1905), *aff'd,* 224 Ill. 300, 79 N.E. 562 (1906); Scholendorff v. Society of N.Y. Hosp., 211 N.Y. 125, 105 N.E. 92 (1914); RESTATEMENT (SECOND) OF TORTS § 892 (2) (a) (1979) ("To be effective, consent must be by one who has the capacity to consent").
18. *See, e.g.,* Friedman, *Legal Regulations of Applied Behavior Analysis in Mental Institutions and Prisons,* 17 ARIZ. L. REV. 39, 75-80 (1975) [hereinafter cited as Friedman]; Roth, Meisel & Lidz, *Tests of Competency to Consent to Treatment,* 134 AM. J. PSYCHIATRY 279, 280-82 (1977).
19. For examples of cases in which conscious patients were literally unable to express a decision, *see* Superintendent of Belchertown State School v. Saikewicz, 370 N.E. 2d 417 (Mass. 1977); *In re* Weberlist, 79 Misc. 2d 753, 360 N.Y.S. 2d 783 (Sup. Ct. 1974).
20. *See, e.g., In re* B., 156 N.J. Super. 231, 234, 383 A. 2d 760, 762 (1977). *But see* Lane v. Candura, 376 N.E. 2d 1232 (Mass. App. Ct. 1978); *In re* Yetter, 62 Pa. D. & C. 2d 619 (Northampton County 1973)
21. *See, e.g., In re* Quackenbush, 156 N.J. Super. 282, 287, 383 A. 2d 785, 788 (1978).
22. *See* Cobbs v. Grant, 8 Cal. 3d 229, 245, 502 P. 2d 1, 12, 104 Cal. Rptr. 505, 516 (1972); Aden v. Younger, 57 Cal. App. 3d 662, 129 Cal. Rptr. 535 (1976); Putensen v. Clay Adams, Inc., 12 Cal. App. 3d 1062, 1083-84, 91 Cal. Rptr. 319, 333 (1970); Kaimowitz v. Michigan Dep't of Mental Health, 1 M.D.L.R. 147 (Cir. Ct. Wayne County Mich. 1976); Holt v. Nelson, 11 Wash. App. 230, 241, 523 P. 2d 211, 219 (1974).

23. *See* Meisel & Kabnick, *Informed Consent to Medical Treatment: An Analysis of Recent Legislation,* 41 U. PITT. L. REV. 407, 444-54 (1980).

24. Johnson v. Zerbst, 304 U.S. 458, 464 (1938).

25. *See generally* Capron, *supra* note 2, at 387-92; Lund, *The Doctor, The Patient and the Truth,* 19 TENN. L. REV. 344, 345 (1946); Plant, *An Analysis of Informed Consent,* 35 FORDHAM L. REV. 639, 654 (1968); Smith, *Therapeutic Privilege to Withhold Specific Diagnosis from Patient Sick with Serious or Fatal Illness,* 19 TENN. L. REV. 349 (1946); Waltz & Scheuneman, *Informed Consent to Therapy,* 64 NW. U.L. REV. 628, 641-43 (1970); Comment, *Informed Consent: The Illusion of Patient Choice,* 23 EMORY L.J. 503 (1974) [hereinafter cited as Comment, *Informed Consent*]; Note, 75 HARV. L. REV. 1445, 1448 (1962); Note, *Restructuring Informed Consent, supra* note 8, 1564-71. The therapeutic privilege has also been incorporated into the statutory law of several jurisdictions. *See* Meisel & Kabnick, *Informed Consent to Medical Treatment: An Analysis of Recent Legislation,* 41 U. PITT. L. REV. 407, 444-54 (1980).

26. Comment, *Informed Consent, supra* note 25, at 504.

27. 464 F. 2d 772 (D.C. Cir.), *cert. denied,* 409 U.S. 1064 (1972).

AYR INSURANCE AGENCY

ALLENBY H. AYR
ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

# Cervical Cancer Screening: The Pap Smear

## SPONSORED BY THE NATIONAL CANCER INSTITUTE

Assisted by the Office for Medical Applications of Research, NIH

### Introduction

**The National Institutes of Health consensus development program brings together biomedical research scientists, practicing physicians, consumers, and others as appropriate, in an effort to reach general agreement on the safety and efficacy of a medical technology. That technology may be a drug, device, or medical or surgical procedure.**

**Following consensus meetings, summaries of conclusions and recommendations issued by consensus panels are widely distributed to the research, practicing, and lay communities. All shades of opinion are reflected in those summaries.**

**At NIH, the Office for Medical Applications of Research (OMAR) is responsible for coordination of the consensus development program. OMAR assists the individual NIH institutes, which sponsor the conferences, in this effort.**

A Consensus Development Conference on Cervical Cancer Screening: The Pap Smear, was held at the National Institutes of Health on July 23-25, 1980. The purpose of the conference was to examine the scientific basis for screening for cervical cancer and to make recommendations for the medical community and the public on the use of the Pap smear in screening for cancer of the uterine cervix. No attempt was made to provide recommendations related to screening by the Pap smear for other cancers of the female genital tract (i.e., endometrial or ovarian).

Recommendations were based on the accepted definition that screening procedures apply to healthy female populations and not to women identified as patients undergoing gynecologic treatments.

Specific questions addressed at this conference were:

1. Does screening with a Pap smear affect the mortality from cervical cancer?
2. Is the Pap smear safe as a screening procedure?
3. On the assumption that screening is beneficial:
   a. Should the Pap smear be used as a routine screening procedure?
   b. If so, at what age should screening become a regular part of a woman's health evaluation?
      At what age is screening no longer rewarding?
      What is the optimal screening frequency at different ages?
      Should the recommendations made in response to the questions above be modified for certain high or low-risk groups?
      If so, what are the groups and what are the modifications?
4. What critical factors are needed to insure that the procedure is reliable?
5. Following screening, what are the responsibilities of those doing the screening for followup, confirmation of findings, and initiation of treatment?

The members of the Consensus Development Panel included epidemiologists, pathologists, obstetricians-gynecologists, practicing physicians, health scientists, a social worker, a lawyer and consumer representatives.

As a framework for developing recommendations, the panel agreed to the following operational definitions:

- A Pap smear, developed by Dr. George N. Papanicoloaou more than 50 years ago, is a cellular specimen removed from the lower female genital tract which is used in routine screening for

---

NIH Consensus Development Conference Summary Vol. 3, No. 4.

EDITOR'S NOTE: For further information about the "NIH Consensus Development Conference Summaries," contact the Office for Medical Applications of Research, Building 1, Room 216, National Institutes of Health, Bethesda, Maryland 20205.

cancer. The Pap smear for detection of *cervical* cancer should include samples of cells from the ectocervix, transformation zone, and endocervical canal.

- In the United States, most Pap smears are obtained as part of a medical examination by a woman's physician or in the context of a health maintenance program. A cervical cancer screening program refers to the testing of large numbers of women who manifest no symptoms of pathologic changes of the female genital tract, in order to classify them as likely or unlikely to have cervical cancer or its precursors.

In 1980, the incidence estimate of invasive cervical cancer in the United States is 16,000 and the estimate of carcinoma *in situ* (CIS), or preinvasive cancer, is 45,000. The latest estimate of mortality in 1980 is 7,400. (Silverberg, E., Cancer Statistics, 1980. Ca A Cancer Journal for Clinicians 30:23-44, 1980).

Three characteristics of a disease have been cited as requirements for making it suitable for screening. First, the disease should have serious consequences. Second, the disease must have a treatment which, when applied to the screen-detected stage of the disease, is more effective than treatment applied after symptoms have led to a diagnosis. Third, the detectable preclinical phase of the disease should have a high prevalence; otherwise, too few cases would be detected to justify the expense of a screening program. Cancer of the cervix was considered by this conference in the context of these criteria and reaffirmed as a disease highly suitable for screening.

### I. Does screening with a Pap smear affect the mortality from cervical cancer?

Evidence suggests that there is a falling incidence of invasive squamous-cell carcinoma* and a decreasing mortality from cervical carcinoma. At the same time, carcinoma *in situ* is being detected with increased frequency. These trends have been noted in association with increased screening for cervical carcinoma and are probably related to early histological diagnosis of cervical neoplasia (abnormal cell growth) in verification of the results of cytological screening.

### II. Is the Pap smear safe as a screening procedure?

There are no known adverse effects that have been ascribed to this screening technique. However, if the Pap smear is incorrectly evaluated by the laboratory, or is incorrectly responded to by the clinician, overinterpretation may result in unnecessary procedures and in possible complications.**

### III. On the assumption that screening is beneficial:

a. Should the Pap smear be used as a routine screening procedure?

The Panel agreed that the Pap smear should be used as a routine screening procedure for cervical cancer.

b. If so,

- At what age is screening no longer rewarding?
- What is the optimal screening frequency at different ages?
- Should the recommendations made in response to the questions above be modified for certain high or low-risk groups? If so, what are the groups and what are the modifications?

For many years, it has been the policy of healthcare providers in the United States to recommend annual Pap smear screening for women over age 18. It should be recognized that this policy has not been based on the results of well-designed experimental studies, because there have been no rigorous randomized trials of the impact of Pap smear screening on mortality. However, this policy has contributed to a reduction in the ill effects and mortality due to invasive cervical carcinoma. The Panel carefully reviewed the data presented at the Consensus Development Conference to determine whether changes in this general screening policy should be suggested. On the basis of available scientific data and judgment, the Panel made the following recommendations for screening asymptomatic females:

- Virgins need not be screened for cervical cancer.***
- All females who have had sexual intercourse should be screened for cervical cancer.
  - —Screening should be initiated soon after the beginning of sexual activity.
  - —If the first smear is satisfactory and does not indicate evidence suggestive of neoplasia, the smear should be repeated in one year.
  - —If the second smear is also satisfactory and negative, rescreening of a majority of healthy females should be repeated at regular intervals of one-to-three years. The decision on precisely how often to rescreen them should be made jointly by the women and their medical care providers. The panel did not agree on precisely how frequently these examinations should be repeated for healthy females of different ages. For healthy females with different assessed risks of developing cervical cancer, it was felt that, in general, the level of risk should not determine the frequency of screening.****

---

*The majority of invasive cancers occur now in women who have *not been screened at all,* rather than in those screened too infrequently.

**Surgical conization for elucidation of minor changes in Pap smear cytology can occasionally result in severe hemorrhage or in an incompetent or obstructed cervix.

***There are some notable exceptions, such as females exposed to DES in utero, who may later develop adenocarcinomata of the cervix and vagina.

The level of risk referred to in the above paragraph is determined by four factors, three of which are consistently identified with *higher than average* likelihood of developing cervical cancer *in situ*, and the fourth of which is consistently identified with *almost complete absence* of risk of developing invasive squamous-cell cervical cancer. The factors determining high risk are: first intercourse before 18 years of age; a variety of sex partners; and low socioeconomic status. The factor determining low risk is life-long abstinence from sexual intercourse ("virgin" status).

- If two negative Pap smears are obtained after the woman reaches age 60, further screening for the detection of cervical cancer appears to be unrewarding. No assessment was made by the Panel of its usefulness in the detection of vaginal, endometrial (pertaining to the lining of the uterus), or ovarian cancer.
- A female whose Pap smear reveals significant epithelial abnormality should be referred for diagnostic evaluation as described in the answer to Question Five.
- Unscreened females at risk should be recruited be aimed at points of contact with medical care, such as neighborhood clinics, emergency rooms, veneral disease clinics, sites of immigration examinations, jails, hospitals, and all physicians' offices. Evidence suggests that education regarding cervical cancer high-risk factors would increase the use of screening.
- A randomized clinical trial to determine optimal screening intervals is not recommended.

## IV. What critical factors are needed to ensure that the procedure is reliable?

Key factors affecting reliability include a proper clinical sample, high-quality laboratory evaluation, and proper communication between the cytopathologist and the clinician.

The quality of a laboratory's cytopathological technique is of prime importance to any screening program, but high quality is difficult and expensive to attain and to maintain. While certain technical points can be evaluated by federal agencies (such as the Center for Disease Control) the key factors in assuring consistently good cytopathologic practice are the qualifications and continuing education of the personnel as well as the quality assurance program of the laboratory. Quality is best assured if a laboratory meets the accreditation standards of the American Society of Cytology and the College of American Pathologists. There must be adequate staffing to maintain high quality. The standards of the American Society of Cytology (currently, a maximum workload per cytotechnologist of 12,000 cases per annum, for screening) and those recommended in the Canadian *Walton Report* (currently, three cytotechnologists per 25,000 cases per annum for screening, quality assurance, supervision, etc.) are recommended. The technical staff must be supported by adequate clerical staff and personnel proficient in cytopreparatory techniques.

Accurate and complete reporting between the cytology laboratory and the clinician is of basic importance to proper Pap screening. Poor wording of the report and the use of laboratories at great distances from the clinician can impair proper communication. Use of numerical classification (i.e., Pap I-V) in place of diagnostic terminology is discouraged and should be abandoned in favor of acceptable, standard, clearly understood medical disease nomenclature. Neoplasia of the cervix develops as a progressive spectrum of tissue changes which terminate in lethal invasive carcinoma, with exfoliated (shed) cells showing characteristic neoplastic changes. Any specific changes detected by Pap smear screening are best stated in clear, mutually understood, diagnostic terminology. In this way, the biologic significance and recommendations for diagnostic workup and handling are reported completely and clearly to the clinician, so that the severity of the changes is understood, and the clinician has clear guidance for appropriate action.

## V. Following a screening what are the responsibilities for followup, confirmation of findings, and initiation of treatment?

The Panel recommends that whenever a clinician receives a Pap smear report suggestive of cervical neoplasia (dyplasia, or cellular anomalies: carcinoma *in situ;* invasive cancer) the patient in question must undergo thorough diagnostic evaluation. It is the responsibility of the physician, or his designated substitute, to notify the patient of the abnormal result. The objective of the diagnostic investigation is to use the simplest procedure to ensure an accurate diagnosis.

Ideally, diagnostic evaluation should include colposcopic examination and biopsies of representative areas of the cervix usually including an endocervical curettage (scraping of the interior wall of the cervix). Diagnostic conization of the cervix (removal of a cone

---

****The assessed risk of a healthy female getting cervical cancer in the future should play a part in decisions about the frequency or repeated screening only when that assessed risk is either extremely high or extremely low. Any healthy female whose risk level is assessed as being at or below the level found in the general female population is considered to have a low risk level. Any healthy female whose risk level is assessed as being five times higher than the risk level found in the general population would be considered to have an extremely high risk level, but application exclusively of the factors determining high risk mentioned in the text has so far not revealed any groups of healthy women with a risk level this high. However, the level of risk should be the criterion used in identifying groups of women for whom intensive and complete recruitment into screening programs is critical.

of tissue) may also be required if the location of the lesion makes colposcopy unsatisfactory, if the diagnosis from an endocervical curettage so indicates, or if the cytologic and histologic findings conflict.

Treatment of neoplastic lesions must be individualized. In certain cases, noninvasive lesions may be treated in outpatient facilities with proper gynecologic oncologic expertise. On the other hand, invasive cervical carcinoma requires the use of hospital facilities in addition to referral to, or consultation with, a physician with expertise in gynecologic oncology. The status of the woman who has been treated for cervical neoplasia should be closely followed.

### Further Investigations

The crucial unanswered question is whether carcinoma *in situ* develops and progresses at different rates in women with different assessed levels of risk. The panel therefore recommends research on the rate of progression of pre-symptomatic disease in high-risk women. The panel also recommends that studies be undertaken to monitor the impact of changes in the Pap smear screening interval on the incidence and mortality rates of cervical carcinoma. Finally, it recommends that a task force be convened within five years to assess all relevant scientific data that may have accumulated since July 1980.

### Minority Opinion - Duncan Neuhauser, Ph.D. (Economics)

Review of the several computer-based, cost-effective decision models does not justify yearly screening unless the risk ration for high-risk groups is at least 5.0. In the absence of such an elevated risk after two negative tests, screening intervals greater than 3 years could be appropriate. In my opinion, the probability that screening prolongs life ranges from .50 to .99+. These decision models are sensitive to the lower end of this probability range only if the screening interval is long. Therefore, a randomized clinical trial does not seem justified. Computer-based models should be widely available in interactive form allowing providers and patients to vary the assumptions and consider the results. These models should be used in high school courses and in health science museums. On the surface, the controversial issue here is the frequency of screening. However, the real issue is the role of computer models in clinical decision making. These powerful techniques are new to medicine and not enough physicians are being educated in their use. This Pap smear debate will be viewed as one of the historical landmarks in this transformation in clinical reasoning.

The conference was sponsored by the National Cancer Institute, the National Institute on Aging, and the National Institute of Child Health and Human Development, in conjunction with the National Center for Health Care Technology and with the assistance of the Office for Medical Applications Research, NIH.

Members of the Consensus Development Panel were: Maureen M. Henderson, M.D. (Chairman), University of Washington Health Sciences Center, Seattle, Washington; Katherine F. Carson, M.D., F.A.C.O.G., San Diego, California; Pelayo Correa, M.D., Louisiana State University Medical Center, New Orleans, Louisiana; Ellen Flannery, J.D., Washington, D.C.; John K. Frost, M.D., Johns Hopkins University School of Medicine, Baltimore, Maryland; Genevieve Hill, M.S.W., Atlanta University, Atlanta, Georgia; Gerry B. Hill, M.B., Ch.B., Cross Cancer Institute, Edmonton, Alberta, Canada; George B. Hutchison, M.D., Harvard School of Public Health, Boston, Massachusetts; Raymond H. Kaufman, M.D., Baylor College of Medicine, Houston, Texas; John J. Mikuta, M.D., University of Pennsylvania, Philadelphia, Pennsylvania; Duncan vB. Neuhauser, Ph.D., Case Western Reserve University School of Medicine, Cleveland, Ohio; Kenneth L. Noller, M.D., Mayo Clinic, Rochester, Minnesota; Estelle Ramey, Ph.D., Georgetown University School of Medicine, Washington, D.C.; Beverly J. Williams, M.D., University of Tennessee Center for Health Sciences, Memphis, Tennessee.

Ralph M. Richart, M.D., Columbia University, served as a consultant to the panel in the discussion of the presentations.

Conference coordinators were: Diane J. Fink, M.D., National Cancer Institute, Bethesda, Maryland; Philip C. Prorok, Ph.D., National Cancer Institute, Bethesda, Maryland.

# Reye Syndrome—Ohio, Michigan

CENTER FOR DISEASE CONTROL,
H.E.W., PUBLIC HEALTH SERVICE, ATLANTA, GA.

In addition to a previously reported study from Arizona,[1] CDC has received reports of studies conducted in Ohio and Michigan which suggest a relationship between Reye syndrome and salicylates (i.e., aspirin) taken during an associated antecedent illness.

Between December 1978 and March 1980, a prospective case-control study of Reye syndrome was conducted by the Ohio State Department of Health. This study involved 6 pediatric centers in the state and examined the possible relationship between Reye syndrome and medications taken during the antecedent illness. One hundred fifty-nine cases were identified in this study; slightly more than half were relatively mild, developing only stage 1 encephalopathy (difficult to arouse, lethargic, sleepy). A large percentage of these patients were identified during an outbreak of influenza A (H1N1) that occurred in December 1978-March 1979 and an outbreak of influenza B that occurred in December 1979-March 1980, or had varicella as an antecedent illness.

Reye syndrome patients and controls, selected from the same school classroom or neighborhood and matched for age, sex, race, and the occurrence of a similar antecedent illness (respiratory, varicella, or gastrointestinal) within 1 week of that which occurred in the case, were interviewed concerning medications taken between the time of onset of the antecedent illness and either admission to the hospital for Reye syndrome (for cases) or recovery from the illness (for controls). For each Reye syndrome case, the date of onset of vomiting, which is usually associated with the onset of Reye syndrome, was recorded. The frequency of usage of only 2 medications was found to be significantly different statistically in cases and controls. Salicylates, including those contained in various compounds, were the only medications which were taken significantly more frequently in cases (95/98, 97%) than controls (114/160, 71%) ($p < .001$). All of the Reye syndrome cases with a history of salicylate ingestion took salicylates during their antecedent illness and prior to the onset of the pre-encephalopathic vomiting associated with this syndrome. Multiple logistic analysis using a model that included histories of salicylate ingestion, fever, headache, and sore throat has demonstrated that although a history of fever was significantly greater in cases than controls, this difference did not account for the even stronger association of cases with a history of salicylate ingestion. Using this model, the estimated relative risk of Reye syndrome for patients taking salicylates was 11.3 (95% confidence limits 2.7-47.5). Histories of headache and sore throats were not significantly different in cases and controls. Medications containing acetaminophen were taken by only 16% (16/98) of cases compared to 32% (51/160) of controls ($p < 0.01$). Although analysis has not yet been completed concerning the dose of salicylates ingested by the patients with Reye syndrome, the majority had a history of taking no more than normally recommended. The medication history was usually obtained from parents within 7-10 days (for cases) and 10-20 days (for controls) after the onset of antecedent illness.

The recently reported study from Michigan involved 25 patients with Reye syndrome and 44 controls selected in a manner similar to that of the Ohio study, matched for the same criteria, and interviewed 4 to 83 days (mean 6.5 weeks) after their acute illnesses. When cases and controls were retrospectively matched for fever (±1°), aspirin was taken significantly more often in cases (14/14, 100%) than controls (14/21, 67%, $p < 0.02$), and acetaminophen-containing compounds were taken significantly less often in cases (0/14), than in controls (6/21, 29%, $p < .05$).

*Reported by TJ Halpin, MD, State Epidemiologist, F Holtzhauer, Ohio State Dept of Health; Dept of Epidemiology, University of Michigan School of Public Health; N Hayner, MD, State Epidemiologist, Michigan Dept of Public Health; Field Services Div, Viral Diseases Div, Bur of Epidemiology, CDC.*

**Editorial Note:** Although the epidemiologic association between Reye syndrome and antecedent viral illnesses is well established, the etiology of this rare disease remains unclear. Several previous reports have suggested the possibility that medications taken during the antecedent illness of patients with Reye syndrome may play a role in the development of this disease, and aspirin is 1 medication which has been mentioned frequently.[2-4]

---

MORBIDITY AND MORTALITY WEEKLY REPORT, November 7, 1980, Vol. 29, No. 44.
*Published by the Centers for Disease Control, Atlanta, Ga.*

The Ohio and Michigan studies reported here and the previously reported smaller study from Arizona (involving 7 cases and 16 controls) are the only controlled studies of the relationship between Reye syndrome and medications taken during the antecedent illness reported since this disease was first described. All 3 of these studies involved in-home interviews focusing specifically on medication histories of Reye syndrome patients and controls.

A number of potential problems are encountered when conducting and analyzing such studies. These include 1) difficulties in obtaining comparable and accurate medication histories in patients following a significant event (Reye syndrome) when compared to controls who have had a relatively minor illness, and the difficulty of accurate recall of events several weeks later, 2) the possibility that cases had a more severe antecedent illness and/or a pre-encephalopathic illness that included severe vomiting and headaches—both of which may have predisposed them to take more medications than controls—and 3) the presumed need to select cases and controls with the same viral infections, including influenza B, influenza A(H1N1), and varicella, since Reye syndrome is thought to be more strongly associated with these infections.

It is possible that parents of patients with Reye syndrome were more likely than parents of controls to recall events immediately preceding their child's major illness and hospitalization, including medications taken by their child during this period. Recall of medication histories for Reye syndrome patients may also have been more accurate and complete than the recall for controls because parents of cases were frequently interviewed earlier after their child's acute illness than were parents of controls. However, the fact that only aspirin or salicylate-containing compounds were found to have been taken significantly more frequently during the antecedent illness in cases than controls in these studies suggests that the association between Reye syndrome and salicylates may indeed be real. Furthermore, the fact that acetaminophen-containing compounds were taken by significantly fewer cases than controls in both studies, which might be expected if Reye syndrome patients were more likely to use salicyaltes than acetaminophen for fever or other symptoms, suggests that the recall of parents of cases was not greater than the recall of parents of controls for these medications.

Another possible reason for differences in medication histories in cases and controls is that Reye syndrome patients may have a more severe or prolonged antecedent illness and/or may subsequently develop a pre-encephalopathic illness, associated with severe vomiting, for which they might receive additional medications. Because elevated temperatures are 1 major reason for taking salicylates, both of these studies have attempted to compare the effects of differing histories of fever among cases and controls. In the Michigan study, even when cases and controls were matched for degree of fever, the difference in salicylate usage remained significant. Analyses completed in the Ohio study have demonstrated that a history of fever, as well as headaches and sore throats—symptoms which might also cause cases to take more salicylates than controls—did not account for the observed differences in salicylate ingestion. Additional analyses in Ohio of aspirin ingestions histories of Reye syndrome patients for the specific period between onset of prodromal illness and onset of vomiting demonstrated that all of 95 patients who received salicylates received some during their antecedent illness—before the onset of pre-encephalopathic vomiting. The possible confounding effects of other symptoms and combinations of symptoms are being further examined in the Ohio study.

Reye syndrome is rare and associated frequently with certain viruses. Thus, comparison of medication histories in cases and controls who had the same viral infection may be important. In both of these studies, controls were selected from the same school and had a prodromal illness within 1 week of that of the cases. It is probable that many cases and controls were matched for infection because a large percentage of the cases occurred during outbreaks of influenza, and varicella patients were matched with other children who had varicella. Further analysis of the salicylate association by specific type of infection should be possible in the Ohio study.

In 1976 the Food and Drug Administration advised that, when treating children who develop vomiting associated with a viral illness, caution should be exercised in using acetaminophen, salicylates, and antiemetics because of the suspicion that these drugs, in combination with a viral illness (a possible cause of vomiting in children) might contribute to the development of Reye syndrome.[5] The results of these studies suggest that during certain viral illnesses the use of salicylates—even before the onset of vomiting—may be a factor in the pathogenesis of Reye syndrome. In view of these data, parents should be advised to use caution when administering salicylates to treat children with viral illnesses, particularly chickenpox and influenza-like illnesses.

## REFERENCES

1. MMWR 1980: 29:321-2
2. Giles HM: Encephalopathy and fatty degeneration of the viscera. Lancet 1965: 1:1075
3. Linnermann CC, Shea L, Partin JC, Schubert WK, Schiff GM: Reye's syndrome: epidemiologic and viral studies, 1963-1974. Am J Epidemiol 1975: 101:517-26
4. DeVivo DC: Reye syndrome: a metabolic response to an acute mitochondrial insult? Neurology 1978: 28:105-8
5. FDA Drug Bulletin. Vol. 6, No. 5, Nov-Dec 1976

# The Professional Standards Review Organization Program

ALAN R. NELSON, M.D.

Mr. Chairman and Members of the Committee:

My name is Alan R. Nelson, M.D. I am a physician in the practice of Internal Medicine in Salt Lake City, Utah, and a member of the Board of Trustees of the American Medical Association. Accompanying me today is Ross N. Rubin, Director of the AMA's Department of Federal Legislation. The American Medical Association is pleased to have this opportunity to present its views on The Professional Standards Review Organization (PSRO) program.

The PSRO program represents recognition by the federal government of the traditional role of peer review of medical services in ensuring that patients receive high quality medical care. Since the inception of this program in 1972, the AMA has supported the mission of the PSRO program: ensuring the medical necessity, quality, and appropriateness of health care services rendered to federal program beneficiaries.

The PSRO program has been built upon the established methodology of the peer review system, and has been successful in attracting physicians to participate in local PSROs. Due primarily to the high priority that is placed on the principle of peer review, it is possible to point to this program as a successful example of cooperation between the medical profession and the federal government for the benefit of patients. The AMA supports the continuation of the PSRO program.

In response to the Committee's press release on July 3, 1980, the AMA's testimony before this Committee will focus on the cost-effectiveness of the PSRO program, and modifications that we feel are necessary in the present PSRO legislation.

## Cost-Effectiveness of the PSRO Program

The AMA feels that it is neither appropriate nor practical to measure the success or effectiveness of the PSRO program based solely upon a ratio of dollars saved to dollars spent. The history of the PSRO program clearly points out that the economics of the program were not the primary consideration behind its formulation. Furthermore, it is extremely difficult to measure PSRO program performance in terms of dollars and cents since no adequate methodology has been established to ascertain such a value. This is made especially clear when the Health Care Financing Administration (HCFA) and the Congressional Budget Office (CBO) analyses of the PSRO program are compared; based on the same data, the two studies came up with contradictory findings. Finally, our review of the PSRO program operation indicates that it is premature to attempt to evaluate the program based upon cost-effectiveness, since most of the PSROs are not fully operational due to the inadequate funding received during their initial, formative years.

## Cost-Effectiveness Analysis is Inappropriate

In our support of the PSRO program, the AMA has viewed the program primarily as a means to help assure quality patient care. In looking to the legislative history of P.L. 92-603, the Social Security Amendments of 1972 (the enabling legislation for the PSRO program), it is obvious that the PSRO program was not created as a mechanism solely designed to save money. In discussing the inclusion of the PSRO program as part of the federal health package, the Conference Report referred to the program in the following manner:

> "The Senate amendment added a new section to the House bill which provides for the establishment of Professional Standards Review Organizations . . . to assume responsibility for comprehensive and on-going review of services covered under the Medicare and Medicaid programs. The PSRO would be responsible for assuring that services were (1) medically necessary and (2) provided in accordance with professional stand-

---

EDITOR'S NOTE: Statement of the American Medical Association made by Alan R. Nelson, M.D. before the Subcommittee on Health, Committee on Ways and Means, United States House of Representatives, August 25, 1980.

> ards. PSRO's would not be involved with reasonable charge determinations. The provision is designed to assure proper utilization of care and services provided in Medicare and Medicaid utilizing a formal professional mechanism presenting the broadest possible cross-section of practicing physicians in an area." (House Conference Report No. 92-1605, October 14, 1972)

As the statutory declaration of purpose for the PSRO program indicates that the program is to "promote the effective, efficient, and economical delivery of health care services of proper quality," it is inappropriate to measure the PSRO program simply on the basis of cost-effectiveness. In our view the PSRO program is meeting this statutory intent, and it has had a beneficial impact by improving patient care. By only using a "dollars saved" figure as a means of assessing the value of decreased hospital utilization brought about through the PSRO review, the purpose behind the creation of the program is obfuscated.

### Cost-Effectiveness Analysis is Impractical

In recent years there have been numerous analyses made concerning the cost-effectiveness of the PSRO program. Most recently, studies have been completed by both HCFA and CBO. However, these two most recent studies, utilizing an identical data base, produced divergent results. According to the May 1980 CBO Staff Draft Analysis Update of their June 1979 evaluation, the PSRO program was not cost-effective in fiscal year 1978. That report states that "for every dollar spent on PSRO review of Medicare patients, only $.40 in resources were recouped, for a net loss of $.60 per dollar spent." The HCFA analysis, "PSRO 1979 Program Evaluation," evaluated the identical data as the CBO report but reached opposite results. This report concluded that "with respect to the cost control objective, the PSRO program has shown the ability to make a modest impact on reducing or slowing down increases in Medicare beneficiary hospital utilization, with an estimated savings in Medicare expenditures $21 million dollars greater than the cost to administer the PSRO program."

The General Accounting Office (GAO) analyzed these different conclusions of the HCFA and CBO studies in a June 12, 1980 letter to Congressman George O'Brien of Illinois. This analysis ascertained that the HHS report measured savings as the reduction of federal (Medicare) expenditures, while the CBO report measured savings as the reduction in total (Medicare and non-Medicare) expenditures. According to the GAO, "this difference in viewpoints accounts for eighty percent of the difference in the two cost-benefit ratios."

Because of this divergence in interpreting the PSRO program data, and the fact that PSRO effectiveness should be reviewed by means other than just cost-effectiveness, the AMA views such single directional analysis as impractical. This view is supported by a June 1979 CBO background paper on "The Effect of PSROs on Health Care Costs," that points out that "both the CBO and HCFA estimates, however, rest on controversial assumptions and are open to considerable error." These two points force us to question the practicality of utilizing the cost-effectiveness analyses in measuring the effectiveness of the PSRO program. This matter is especially critical now that the Department of Health and Human Services (HHS) has started to terminate PSROs that it deems to be "poorly performing and cost-ineffective."

### Cost-Effectiveness Analysis is Premature

The Health Care Financing Administration has recently released the Medicare Annual Report for Fiscal Year 1979. An analysis of this report indicates that any attempt to evaluate the success of PSROs at this point on the basis of cost-effectiveness is premature. In most cases the early years of the PSRO program were involved with area designation, organizational development, and local standard setting. PSROs are now realizing the benefits of this early implementation strategy. According to this report, implementation of PSRO hospital review was the primary concern of the program for the first five years of its existence. The HCFA report goes on to say that "in fiscal year 1978, the emphasis of the (PSRO) program was changed from implementation activity to activity that is designed to improve individual PSRO performance." Based upon this stated change in program emphasis, and upon efforts undertaken in 1979 by HCFA to improve individual PSRO performance, it is our view that a cost-effectiveness analysis of the PSRO program is premature at this time.

The fact that PSROs have operated with inadequate funding only furthers the point that it is premature to attempt to measure the cost-effectiveness of the program. The PSRO program has been consistently underfunded, with some PSROs not even receiving all of the funds necessary to properly design and subsequently implement the sophisticated review and data collection operations essential to conduct a proper review program. Until the program becomes fully operational, it is a mistake to attempt to ascertain its cost-effectiveness.

### PSRO Amendments

Last year, a United States District Court in the District of Columbia held that a PSRO was an agency of the federal government for purposes of the Freedom of Information Act. This decision would allow disclosure of PSRO information upon public request, and could conceivably place the entire PSRO program in jeopardy. While this decision is now on appeal, and while a second United States District Court in Philadelphia has recently held that PSROs were not subject to Freedom of Information Act requests, the AMA and other organizations have been seeking an amendment to the PSRO law that would guarantee the confidentiality of provider specific PSRO information. The effectiveness of the PSRO program is inextricably linked to its ability to preserve the confidentiality of patient, physician, and hospital profiles. At the present time, approximately 167,000 physicians participate in the PSRO program. Without a guarantee of confidentiality it is foreseeable that much of this support will be lost, and PSROs will lose their effectiveness.

Owing to the potential for harm to the PSRO program if the confidentiality of provider profiles is not maintained, both the Senate Finance Committee and the House Interstate and Foreign Commerce Committee have approved measures to protect PSROs from Freedom of Information Act requests. We hope that the House will act expeditiously on this important issue. Also, this issue was very recently considered by the Senate when it approved a corresponding provision to exempt documents generated by Health Services Review Organizations (the Veterans Administration's versions of the PSRO program) from Freedom of Information Act requests.

In addition to guaranteeing confidentiality of PSRO information, the AMA would also recommend that the PSRO law be amended to include a provision that would subject services performed by or in federally operated health care institutions to PSRO review and to provide for a more effective administration of the program. A copy of AMA developed amendments to the PSRO law is attached to this testimony.

### Conclusion

The American Medical Association continues to support the PSRO program. We believe that this program properly recognizes the role of peer review of medical care and that it has great potential for assuring that high quality care is provided to Medicare and Medicaid beneficiaries. The PSRO program has been a successful cooperative venture between government and the medical profession to the benefit of the patient population. Since the enactment of the PSRO program in 1972, there have been significant gains in developing the review process and formulating quality assessment methodology. We support efforts, both within the federal government and the private sector, that are designed to make the PSRO program even more efficient through such efforts as focused review on perceived problem areas and medical care evaluation studies.

The PSRO program has been accepted by the medical profession as a quality assurance program. Therefore, we feel that it is inappropriate to evaluate the program solely based on a measure of dollars and cents.

Mr. Chairman, we urge the Subcommittee to take our comments into consideration when making decisions that could affect the future of the PSRO program. We recommend that you accord the program opportunity to develop to its full potential. The AMA is ready to work with you, the Subcommittee and its staff, and others to strengthen the effectiveness of the PSRO program.

---

## Physician's Assistant—Definition of Required "Supervision"

A *Connecticut* bill, approved on May 28, 1980, defines "physician assistant" as "a skilled individual who is qualified by academic and practical training to provide patient services under the supervision, control, responsibility and direction of a physician . . ." It, further, defines "supervision" to mean "the overseeing of or the participation in the work of a physician assistant by a licensed physician including but not limited to: (1) Continuous availability of direct communication either in person or by radio, telephone, or telecommunications between the physician assistant and a licensed physician; (2) availability of a licensed physician on a regularly scheduled basis to (A) review the practice of the physician assistant, (B) review charts and records of the physician assistant, and (C) support the physician assistant in the performance of his services; and (3) a predetermined plan for emergency situations, including the designation of an alternate licensed physician in the absence of the regular licensed physician." (Substitute Senate Bill No. 312)

—*Legislative Roundup,* July 18, 1980.

# Moratorium on Recertification

## AMA COUNCIL ON MEDICAL EDUCATION

The first medical specialty board to include recertification as a part of its policies and procedures was the American Board of Family Practice. This policy was adopted as a part of the incorporation of the American Board of Family Practice in 1969. After many years of discussion, the American Board of Medical Specialties (ABMS) adopted a recommendation for specialty recertification in 1974.

The first recertification examination was given by the American Board of Internal Medicine in 1974. The examination emphasized clinical medicine and approximately 97% of the physicians taking the examination achieved a passing score.

An informal review of specialty society publications indicates that there is increasing questioning of the appropriateness and value of recertification. A survey of practicing pathologists in 1979 indicated that 92% of those responding opposed recertification in pathology. Even though all 23 medical specialty boards have adopted the 1974 recommendation of the ABMS in advocating specialty recertification, progress has been slow in developing and implementing procedures acceptable to the ABMS. Table 1 lists some of the boards that are developing recertification procedures and the year in which they hope to offer recertification.

Table 1 also gives the years recertification examinations have been given or are planned by the nine boards which have ABMS approval of their recertification procedures. Those boards which have not filed a notice of intent to establish a recertification process can be identified by the first column of dates of notice of intent. The date of approval of the recertification process by the ABMS is stated in the fifth column. The numbers of examinations given to date is in the sixth column. The number of candidates passing the examination is in the last column but the percentage of those passing is not available except in one instance.

In the interim since the ABMS recommendation for recertification, the concept that recertification examinations could evaluate reliably the clinical skills needed for the practice of medicine has been questioned. In the past year, the Coordinating Council on Medical Education has published an excellent Report on The Continuing Competence of Physicians which shows the many aspects of evaluation and their complex relationships. This report urged further efforts to find better ways of measuring physician performance. Report G (A-79) of the Council on Medical Education identifies three major elements in the evaluation of competence. A single cognitive examination can assess only a portion of the attributes that determine a physician's competence.

Recertification, even if voluntary, may prove in practice to be a requirement. Lack of recertification may jeopardize hospital staff appointments and privileges, establish a differential in fee schedules, or result in the denial of eligibility for payment. Physicians might find that even though they practice good medicine in the view of their peers, such things as fee schedules, hospital staff appointments, and licensure status might be linked inappropriately to recertification. There is some risk also that the public might come to consider recertification as the only indication of competence. Recertification might also result in a further increase in the cost of medical care because of the time and costs to the physician for recertification, as well as the inherent increase in costs that accompany specialization.

Recertification on a broad scale would seem to pose additional policy and administrative problems. Some of the questions that should be answered before implementing recertification are as follows:

1. How should individual physicians be listed in the Directory of Medical Specialties with regard to recertification?
2. What is the status of the physicians who take and fail the recertification examination compared with physicians who choose not to take the examination?

---

EDITOR'S NOTE: At the meeting of the House of Delegates on July 23, 1980, a definitive position was taken when Report K (A-80) of the Council on Medical Education was adopted in this form.

Table 1

RECERTIFICATION PROCEDURE FURNISHED BY ABMS

| *American Board of* | *Date/Notice of Intent—At Least 1 Year Prior to Recertification* | *Date/Proposed Recertification Plan—120 Days Prior to ABMS Vote* | *Date/COCERT Review and Recommendation* | *Date/Executive Committee Review and Recommendation* | *Date/Action of ABMS Voting Representatives* | *Date/Board Recertification Examination* | *Number Candidates Evaluated* | *Number Candidates Recertified* |
|---|---|---|---|---|---|---|---|---|
| Allergy & Immunology | 2/18/76 | 7/9/76 | 1/19/77 | 1/28/77 | March 1977<br>Approved | October 1977<br>1980 | | 182 |
| Anesthesiology | April 1976 | | | | | 1984 | | |
| Colon and Rectal Surg. | | | | | | | | |
| Dermatology | 11/18/77 | | | | | | | |
| Family Practice | 12/69 | | | | | 10/28/77<br>July 1979* | | |
| Internal Medicine | 3/10/76 | | | | Sept. 1973 | October 1974<br>10/77 10/25/80 | | 96% of 3,556<br>2,153 (77) |
| Neurological Surgery | | | | | | | | |
| Nuclear Medicine | Cancelled<br>3/30/78<br>8/1/77 | | | | | | | |
| Obstetrics & Gynecology | 12/75 | | 12/8/75 | 1/29/76 | March 1976<br>Approved | December 1977<br>December 1978 | 1,430 | 2/3/78<br>1,351 |
| Ophthalmology | | | | | | | | |
| Orthopaedic Surgery | Verbal<br>9/79 | | | | | | | |
| Otolaryngology | 10/12/77 | | | | | | | |
| Pathology | 12/1/76 | | 12/8/77<br>Approved | 12/9/77<br>Not Acceptable | 3/17/78<br>Not Approved<br>3/15/79<br>Approved | 1983/84 | | |
| Pediatrics | 5/21/76 | May 1977 | | | Sept. 1977<br>Approved | June 1980 | | |
| Physical Medicine & Rehabilitation | | | | | | | | |
| Plastic Surgery | Prior to July 1975 | 5/17/76 | 7/16/76 | 8/13/76 | Sept. 1976<br>Approved | Spring 1977<br>10/9/79 | | |
| Preventive Medicine | | | | | | | | |
| Psychiatry & Neurology | 2/26/79 | 2/5/80 | | | | 1985 | | |
| Radiology | | | | | | | | |
| Surgery | Dec. 1976 | 11/7/77 | 12/8/77<br>Approved | 12/9/77<br>Approved | 9/21/78<br>Approved | 1981 & 1986** | | |
| Thoracic Surgery | 11/7/77 | 5/8/79 | 7/26/79 | Sept. 1979<br>Approved | 9/21/79<br>Approved | 1981 & 1986** | | |
| Urology | Feb. 1978 | 3/21/79 | 7/26/79<br>Jan. 1980 | Sept. 1979<br>Not Approved<br>Dec. 1979<br>Not Approved | 9/21/79<br>Tabled<br>3/13/80<br>Tabled | | | |

Emergency Medicine—New Board, plans compulsory recertification in future.

*Mandatory

**Mandatory (time limited certificates)
Voluntary prior to 1986

3. How will the recertification process deal with a physician who can pass the recertification examination and yet may be incompetent for other reasons, such as alcoholism or a physical disability?
4. Should the period of recertification be determined individually, based on the level of the physician's performance in the recertification procedure?
5. Since the advocates of recertification state that the process does not assure competence, should not a careful effort to define the true objectives of recertification be made?

There is also a possibility that because of the disadvantages some physicians might accrue as a result of not being recertified, courts might interpret recertification as interfering with a physician's right to make a living. For the boards themselves, there is potential for legal action to force the board to give the recertification examination to physicians who were not certified originally because they had not taken the required residency training necessary for eligibility. Thus, physicians who might complete the recertification examination successfully, but who were not certified originally, would present a dilemma with respect to their specialty status.

In studying physician competence, it is difficult to link any challenge-examination-procedures to assurance of physician competence. Among the six medical specialty boards which have given recertification examinations, none has to date reported evidence that recertification resulted in improved patient care, yet substantial amounts of physician time, effort, and expense have been devoted to this procedure.

The consequences of implementing an extensive system of recertification of medical specialists are very significant and as yet not clearly understood. Adequate reliable facts do not exist upon which the final decision on selection of methodology for the process can be made.

*Recommendations*

1. That the American Medical Association request the American Board of Medical Specialties and its constituent boards (a) to study in detail the effectiveness and contributions of the currently operating recertification programs, (b) to determine the cost in time and money, the amount of benefit to patients, and the total effect on the physician, and (c) to report the findings of this study to the medical profession at large.
2. That the American Medical Association recommend that except for those American specialty boards which have already implemented a mandatory or voluntary recertification program, recertification by all other American specialty boards be delayed pending the outcome of the study recommended in 1. above, in order to allow for the selection of the best procedure(s) from the many alternative methodologies that have been or will be developed.

---

## Confidentiality: Drug Dispensing and Venereal Disease

Although it is not to be generally encouraged, there are circumstances in which physicians may dispense drugs. At the same time, the obligation of the physician to protect the patient's confidences is one of the most serious obligations imposed on him. Accordingly, the physician is not precluded from dispensing appropriate medication, such as ampicillin-probenecid, to his patient who has been diagnosed as having a venereal disease, such as gonorrhea, since forcing a patient to have such a drug "dispensed in the presence of the pharmacist" could very well destroy the confidential nature of that particular physician-patient relationship.

—*Opinions and Reports of the Judicial Council of the AMA*

# Current Medicolegal Issues

THE CITATION

## Right to Die—New York

The director of a Roman Catholic religious order could act on behalf of a member of that order who was diagnosed as being in a "permanent vegetative state," and he was authorized to direct termination of life-support systems under certain conditions, a New York trial court ruled.

The 83-year-old religious Brother had lapsed into a deep coma as a result of a cardio-respiratory arrest during hernia surgery. As a result of brainstem anoxia, he had no spontaneous respiration and was maintained by a mechanical respirator.

Supported by the Brother's surviving relatives, the Director of the religious order sought the authority under New York law to withdraw the extraordinary life support systems. The hospital refused to have the system withdrawn, and the District Attorney opposed the request, in light of the State's interest in preserving of life.

Physicians testifying in court unanimously concluded that, to a reasonable degree of medical certainty there was no reasonable possibility that the Brother would return to a cognitive, sapient state. There was also uncontroverted testimony that, on more than one occasion, the Brother had stated that if he were ever in a hopeless condition he would not wish the process of death to be prolonged. Based on this evidence, the court found that the Brother opposed continued use of respirators where chances of recovery from a vegetative state were largely nonexistent. If the Brother were competent to testify, he would order a termination of the life support systems, the court concluded.

The court then conducted an extensive review of the law on personal incompetency and the right to refuse treatment. Limiting its decision to this case, the court ruled that the State's interest in the preservation of life should not, under the circumstances surrounding the Brother's condition require that he submit against his will to treatment when there is no longer reasonable hope of recovery.

Because the Brother himself was incompetent and unable to express his desires at the time of trial, the court authorized his religious superior to act on his behalf. The religious superior was authorized by the court to direct a removal of the respirator on two conditions: (1) he must secure medical opinion, based on examination, that no reasonable medical possibility exists that the Brother would ever regain sapient or cognitive function or capacity; (2) the District Attorney must be allowed to have physician-representatives present when this examination is performed, the court stated—*Application of Eichner,* 423 N.Y.S. 2d 580 (N.Y. Sup. Ct., Dec. 6, 1979)

*Editor's Note:* On January 24, 1980, the Brother died, before the respirator was disconnected and before an appellate court could rule on the State's appeal of this decision. This case is quite similar to *In the Matter of Quinlan* (THE CITATION, Vol. 33, No. 2, p. 13). However, the patient in the *Quinlan* case is still alive, although comatose, four years after the New Jersey Supreme Court permitted the removal of her respirator.

In neither case did the patient meet the criteria for "brain death" established by the Ad Hoc Committee of Harvard Medical School. Thus, this is not a case involving a determination or definition of death, but rather the right to refuse treatment, even if such refusal would result in immediate death.

## Right to Die—Florida

A 73-year-old patient with amyotrophic lateral sclerosis had a right to disconnect the respirator keeping him alive, the Florida Supreme Court ruled.

In October 1978, the patient, with the approval of his relatives, requested that his respirator be disconnected. The hospital would not allow him to do it, and the state attorney said that anyone who assisted him would be tried criminally. A trial court judge visited with the patient in the hospital and ruled that the patient could disconnect the respirator. The state attorney appealed the ruling, but the appellate court affirmed the trial court's decision. Meanwhile, the patient left the hospital with a portable respirator and died 49 hours after he disconnected the device.

---

THE CITATION, Vol. 41, No. 1, April 15, 1980. THE CITATION is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.

On appeal, the Florida Supreme Court said that a competent adult patient, with no minor dependents, suffering from a terminal illness, had a constitutional right to refuse or discontinue extraordinary medical treatment where all affected family members consent. The high court limited the ruling to nearly identical cases and said that it would have to proceed on a case by case basis. The lower court's decisions were affirmed.—*Satz v. Perlmutter,* 379 So. 2d 359 (Fla. Sup. Ct., Jan. 17, 1980).

*Editor's Note:* A previous decision in this case was reported in THE CITATION, Vol. 38, No. 4, p. 37.

## Right to Refuse Drugs

Mental patients have the right to reject drugs and seclusion ordered by their physicians unless they present a danger to themselves or others, a federal trial court in Massachusetts ruled.

Seven patients at a state mental hospital filed a class action suit against the head of the state mental health department, 13 physicians and a psychologist who treated them at the hospital. They challenged the practices of forced medication and seclusion in nonemergency situations. The patients maintained that the use of psychotropic drugs such as Thorazine, Mellaril, Prolixin and Haldol in nonemergency situations violated their constitutional right to refuse treatment. Those drugs can cause serious, adverse, irreversible reactions. The most common adverse reaction was tardive dyskinesia, a condition characterized by involuntary motor movements, particularly of the face, lips and tongue. Other extrapyramidal effects caused by psychotropic drugs were considered reversible. The patients also claimed that the seclusion policy at the hospital violated the statute that permitted seclusion only in emergency situations.

Ruling in favor of the patients, the federal trial court said the patients had a constitutional right to a say in their treatment. However, the hospital staff could use forced seclusion and medication where there was a substantial likelihood of extreme violence, personal injury or attempted suicide. The court stated that patients realized the need for treatment in emergency situations even though they suffered some impairment of their relationship to reality.

The trial court based its decision on the constitutional right of privacy, including the right to bodily integrity. The use of forcible medication in nonemergencies to help the patient was a laudable goal but did not override the patients' right to refuse treatment. Even if use of psychotropic drugs was quicker and more effective than other treatments, patients must be given the option to follow a more conservative course in a nonemergency setting.

Finally, the court said that factors of convenience and cost alone were inadequate to justify the hospital's failure to respect the patients' constitutional rights. On the question of damages for the patients, the court found that they had not proved that the medication and seclusion practices of the physicians had failed to meet acceptable medical standards.—*Rogers v. Okin,* 478 F. Supp. 1342 (D.C., Mass., Oct. 29, 1979)

## Physician Loses Countersuit

A physician had no cause of action against a patient or his attorney for malicious prosecution for filing a medical malpractice suit against him, a North Carolina appellate court ruled.

The physician operated on the patient to remove hemorrhoids. About ten days later the patient complained to the physician that he was unable to have bowel movements. The physician prescribed hot baths, but the pain persisted. When his stomach and abdomen became swollen, the patient obtained a pair of rubber gloves and removed a tube and gauze packing from his rectum. Afterwards, he was able to have bowel movements.

Based on that information, the patient's attorney filed a malpractice suit against the physician. A trial court granted a directed verdict against the patient, and the physician then filed suit against the patient and attorney for malicious prosecution. He also filed suit against the attorney separately alleging negligent violation of a duty of care required of attorneys in their professional duties.

The physician claimed that the attorney should have investigated the facts more carefully and consulted a medical expert before filing suit. He also alleged that the patient and the attorney filed suit knowing that it was totally without merit. A trial court granted summary judgment in favor of the attorney, and the physician appealed.

Affirming the decision, the appellate court said that the attorney had probable cause to file the malpractice suit against the physician based solely on the patient's statements to him. The attorney had no obligation to exercise any degree of care toward the physician, the court said. If the attorney were required to protect the rights of an adverse party, he would have a conflict of interest with his own client, the court noted.

Moreover, if attorneys were liable for mere negligence in protecting the rights of an adverse party, they would be fearful of instituting lawsuits on behalf of their clients. The end result would be limitation of free access to the courts, the appellate court concluded.—*Petrou v. Hale,* 260 S.E. 2d 130 (North Carolina Ct. of App., Nov. 20, 1979)

# Month in Washington

From now [Nov. 26, 1980] until mid-January the most-used word in the nation's capital will be transition. Reagan people—or allegedly Reagan people—will swarm about the town with knowing looks as to who's on first base, tapping briefcases bulging with position papers and bright new ideas for a brave new government.

To the purist, the word "interregnum" is preferable to "transition" in describing the Washington scene—for indeed there is an interval between two successive reigns, a suspension of administrative function.

Reagan said he wants his administration to "hit the ground running" when it takes office Jan. 20.

The selection of the cabinet dampened the fire of speculation about the tone and tenor of the incoming administration in this town that hasn't had any practice in dealing with a Republican from the conservative wing of the party.

Reagan has been supplied with detailed position papers on health policy from his advisory group for use in charting his administration's course next year. A transition team is working with President Carter and his aides on the transfer of power. The proposed federal budget for the fiscal year that starts next October is almost completed. And now the Reagan officials will have their whack at it. Usually a new administration doesn't do much tampering with the carryover budget.

In a move to lay the groundwork for early action, Reagan appointed six people to review the federal structure with an eye to lower level appointments and possible reorganizations. Elizabeth Dole, wife of Sen. Robert Dole (R-Kans.) and former member of the Federal Trade Commission, will handle human resources including the Health and Human Services Department, the Housing and Urban Development Department and the Department of Education.

Reagan has indicated opposition to the separate Department of Education that was established to carry out a controversial campaign pledge by President Carter aimed at wooing the votes of teachers. And there has been renewed talk about reorganizing the HHS Department in order to put more emphasis on health and less on its welfare functions.

Reagan's health advisory group, headed by William Walsh, MD, president of Project Hope, has proposed a pool arrangement for private health insurance companies under which insurance would be made available to people whose disabilities make them uninsurable at present.

They would pay premiums which would be subsidized, if necessary, by the rest of the insured population.

Other recommendations included:

—Allowing Medicare-Medicaid beneficiaries to choose private coverage with premiums paid by the government.

—Examining the $1 billion renal dialysis program to determine if services could be provided at less cost.

—Expanding home health benefits with an aim to reducing Medicare-Medicaid payments for hospital and nursing home care.

—Decentralizing health planning.

The thrust of the report toward easing federal regulation and encouraging a greater role for the private sector was mirrored in a report on health policies issued by the Heritage Foundation, a Washington, D.C., study group.

The Heritage Foundation, a conservative think tank with strong ties to the Reagan administration, has come up with a blueprint for future government that includes some sweeping changes in health.

The Foundation calls for examination of methods of "phasing out Medicaid and Medicare in their present form, pursuant to the development of systems relying on 'vouchers' and a more competitive private market."

Foundation President Edwin Feulner, said the Foundation's "Mandate for Leadership" study, a year in the making, is a basic set of conservative policy recommendations "which I hope the Reagan administration will give its careful and serious consideration." He said the study represents the collected opinions of more than 250 experts from government, universities, think tanks, and the business and legal professions.

The author of the report on the HHS Department was David Winston, an aide to Sen. Richard Schweiker (R-Pa.).

The HHS section proposed a freeze on all HHS consulting contracts pending a full review of their usefulness, noting that the department "is very heavily dependent on such outside consultants."

It called for concentration on the role of HHS as a " 'last resort,' while deregulating and enhancing the private sector's innovative capabilities."

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

Turning to the Health Care Financing Administration, (HCFA) which runs Medicare and Medicaid, the report said HCFA has considerable difficulties managing fiscal intermediaries (e.g., insurance carriers) through which Medicare and Medicaid programs are administered. Furthermore, it finds it difficult to restrict health cost increases because of the retrospective, cost-based reimbursement system for these programs.

Immediate examination of means to improve the administration of Medicaid and Medicare was urged. Containment policy should be turned away from a controls and guidelines approach to a process of reimbursement reform deregulation, and improved competition, according to the study.

A significant recommendation was that "attention should be given, however, to the reduction or elimination of the Professional Standards Review (PSRO) program."

The Foundation study also noted that the National Institutes of Health have been criticized for duplicating work in the private sector. "Private organizations should be encouraged to carry out more development work, reserving NIH for areas with little commercial promise. Methods could be examined of altering the tax treatment of private research to encourage private involvement in more risky, innovative fields."

The report added that "bureaucratic problems of NIH might be reduced by strengthening the Director's authority to improve budgeting and planning, and by analyzing the cost structure with a view to reducing indirect costs." Another significant proposal was for a thorough review of federal involvement with Health Maintenance Organizations (HMOs) with a possible six-month moratorium on all new program awards and extensions.

****

House-Senate conferees have deleted from the Medicare-Medicaid amendments package a majority of the provisions that had been disputed by the medical profession.

The victory for the health providers was highlighted by elimination of the controversial Senate provision that would have restricted Medicaid beneficiaries' freedom of choice of institution by allowing states to specify which hospitals beneficiaries could attend.

Advocates of the provision had claimed that states could save money by channeling Medicaid patients to lower-cost facilities, but opponents, including the AMA, warned that such restrictions raised the spectre of a two-tier system of care.

The amendments constituted the health section of the budget "reconciliation" bill Congress has been working on in an attempt to bring federal spending in line with Congress' own, self-imposed budget limitations.

The conference committee's agreement on the total budget "reconciliation" was expected to clear the way for final Congressional approval. There had been a question whether Congress would be able to work out a compromise between House and Senate versions of the bill during the "lame duck" session, but the lawmakers were anxious to resolve their differences in order to avoid what would have been a shattering blow to the Congressional budget process through failure to act.

One of the major provisions removed from the Medicare-Medicaid list was the proposal for sweeping changes in the way Medicare reimburses hospitals. This was the heart of the long-standing plan by Sen. Herman Talmadge (D-Ga.) to pay hospitals by groups, size and class on a prospective basis.

Another Talmadge provision dropped would have changed the criteria for determining reasonable charges for physicians' services and looked toward state-wide uniformity in fee allowances. This provision also would have restructured the payment basis for hospital-associated physicians.

A controversial, administration-supported provision to boost Medicare payments for Health Maintenance Organizations (HMOs) to 95 percent of the prevailing level was stripped from the measure.

Hospitals won their fight against a cost-cutting amendment that would have eliminated the current Medicare 8.5 percent differential payment for nursing costs.

The conferees also abandoned a proposal for liberalized conditions for reimbursement for chiropractic services, and voted down a provision for expanded payment for community mental health centers.

****

The AMA has taken strong exception to two draft documents on health planning and has asked Health and Human Services Secretary Patricia Harris to recall them immediately.

The documents outline standards and measurements to be used in evaluating Health Systems Agencies, State Health Planning and Development Agencies, and the Health Planning Program as a whole. While recognizing the need for federal monitoring of the program, the AMA said the two drafts "represent an unduly extensive impositon of federal standards on the health planning process."

The AMA pointed out that the proposed standards are derived from the 1978 National Health Planning Guidelines and the draft National Health Goals, neither of which yet has legal standing. "The wholesale incorporation of these guidelines and goals into a review system to establish norms, the deviation from which will subject an agency to sanctions, transforms the guidelines and goals into federally-mandated requirements."

# Reflections from the Dean's Office

## For Richer, for Poorer

ROBERT U. MASSEY, M.D.

Conversations about the cost of medical care, like conversations about inflation or regulation, have become tedious, especially since there is nothing much new to be added; these subjects seem no longer capable of calling forth new ideas.

However, the rising cost of medical education is not a matter that either medical educators or medical students can avoid. The bills have to be paid and neither students nor their parents can carry a heavier burden; tuition costs exceed $14,000 in some schools, and legislators have been told that we shall have doctors aplenty for longer than they will have need of them.

We recently had to tell our students that we were reluctantly recommending that their fees be increased by $1,000 next year, an increase of 50 percent in combined tuition and fees. That we had deferred increases for the past five years was no comfort. Federal funds supporting medical education had been reduced by half and were likely to disappear altogether; research support could not be counted on to sustain more educational expenses; and those who pay for medical care are not persuaded that they should assume a greater share of educational costs; they question whether they should pay any of them.

Philanthropy is carrying a smaller portion of the costs than it did a decade ago; at no time recently has private giving provided for more than one or two percent of the revenues needed for medical education. For public medical schools, the legislators in most states are in no mood to increase their contribution to professional education from diminishing tax revenues.

David Rogers spoke of "imaginative retrenchment;"[1] certainly imaginative accounting is needed; directors of university hospitals speak of "revenue maximization," and vice-presidents of academic medical centers are creating development offices where none existed before. Tuition and fees have gone up 114 percent on average in 10 years.[2] Only medical students who have taken care in the selection of their parents can afford these costs; at least half of them will carry a heavy burden of debt into their early practice years. With the prime interest rate over 18 percent, they can hardly be expected to devote their entire hearts and minds to the science and art of medicine. It is not surprising that we use financial language and speak of medical education costs as an investment; not surprising at all when the care of the sick turns into the health care industry, and patients become consumers of health care packages which are produced and delivered.

It may be impossible—or inconsequential—to decide with complete equity who ought to share the costs of medical education; the invisible hand of the market will decide in any case.

Medical school costs in the United States totalled about $4.5 billion last year, over 250 percent more than 10 years earlier, an increase of 13 percent per year compounded, but there are more medical schools now and more students. The increase per student during the decade was 6.2 percent per year compounded.[3]

Even so, the combined revenues of all medical schools is little more than two percent of the cost of medical care; three months of inflation in these costs would pay the medical education and research bill in our 127 schools.

Those funds, of course, can not be captured. Academic medical centers must turn more to alumni, to the profession, and to private enterprise for support for their work of education and research, as well as for student loans and scholarships. There is work for students in research laboratories, hospitals, clinics, and in tutorial programs. The burden may be lightened and new funds found, but these will not be enough.

The danger of cost-cutting is that it is generally unplanned; like most retreats it is seen as an unpleasant interruption to a sustained advance. But suppose the advance is over, and that, for a decade or so, nothing may be added without taking something away. If the objectives are to improve the quality of education and to increase biomedical knowledge, and to do both for the benefit of patients, some remodelling of the system may safely take place. The crisis in educational funding is a precondition for change, for better or for worse, for richer or for poorer. If it is to be for better and richer, change needs to be managed with care: simplifying, improving, renewing, and keeping within bounds. We shall be travelling light.

### REFERENCES

1. Rogers David, *American Medicine Challenge for the 1980's*, Ballinger Publishing Co., Cambridge, Mass., 1978, p. 94
2. Undergraduate Medical Education, JAMA, 1980: 243:849-866.
3. Ibid

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# TAKE THE ÆTNA TOTAL CHECK-UP.

## CHECK THE FEATURES OF YOUR PRESENT PROFESSIONAL LIABILITY PLAN AGAINST THESE:

- ☐ Major Liability plus Property Coverages.
- ☐ Many optional coverages give you a "made-to-order" program.
- ☐ No Partnership/Corporation or Employed Physician surcharges.
- ☐ A Dividend Program which may reduce your insurance costs*.
- ☐ A Loss Control and Education Program.
- ☐ 24-hour claim service here in your state.
- ☐ Personal service from your local Ætna agent.
- ☐ Monthly or quarterly payments as you prefer.

Ætna TOTAL Professional Liability Program for Connecticut Physicians. Without obligation, I'd like to know more about this Program.

Name or Group ________

Address ________

City ________ State ________ Zip ________

My present insurance expires on ________

Write: Ætna Life & Casualty
P.O. Box 1980
Bridgeport, CT 06601
ATTN: Frank Ginty

Ætna provides every feature listed. Plus the assurance of knowing your policy is backed by Ætna's resources and dependability. If you couldn't check every box, you may not be getting as much as you should out of your premium dollar. Now that you've taken the Ætna TOTAL check-up, maybe you'll want to examine the coupon. Return it and see if Ætna's TOTAL Program isn't an improvement over your present coverage.

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

Ætna
LIFE & CASUALTY

The Automobile Insurance Company of Hartford, Connecticut

LAW, MEDICINE AND PUBLIC POLICY

# Medical Decisions for Incompetent Adults: The *Spring* Case II

JOSEPH M. HEALEY, J.D.

Protecting the rights of incompetent patients is a difficult task, complicated by several factors. First, it is not always clear who has the authority and the knowledge to make decisions for the incompetent patient. Second, the term "legal incompetent" is so broad that it may refer to an adult, a minor, a comatose patient, a mentally ill patient or a mentally retarded patient. Third, it has not always been clear in the law whether incompetent patients possessed the same rights, to the same degree as competent patients. The case of Earle Spring[1] has gone a long way toward clarifying these issues, at least for the residents of Massachusetts.

A major concern of health care providers has been the extent to which they have had a legal obligation to seek judicial approval before withholding "life-prolonging treatment" from an incompetent patient. In the Spring case the Massachusetts Supreme Judicial Court takes great pains to point out that neither the Saikewicz case[2] nor the Spring case involves the legality of action taken without judicial authority and that neither established any requirement of prior judicial review which would not otherwise exist. The Court identified some of the factors to be taken into account in determining whether to seek such an order:

> "the extent of impairment of the patient's mental faculties, whether the patient is in the custody of a State institution, the prognosis without the proposed treatment, the prognosis with the proposed treatment, the complexity, risk and novelty of the proposed treatment, its possible side effects, the patient's level of understanding and probable reaction, the urgency of decision, the good faith of those who participate in the decision, the clarity of professional opinion as to what is good medical practice, the interests of third persons, and the administrative requirements of any institution involved."[3]

The consequence of acting without prior judicial approval remains, as it was before these two cases, the possibility that such actions might result in criminal or civil liability. The absence of court approval does not result in automatic liability. The Court points out, however, that one of the primary values of seeking court approval would be to resolve disputed aspects of complicated questions. The Court then clarified its position on the use of hospital committees:

> "We in no way disapprove the practice of committee review of decisions by members of a hospital staff. But private medical decisions must be made responsibly, subject to judicial scrutiny if good faith or due care is brought into question in subsequent litigation, although the concurrence of qualified consultants may be highly persuasive on issues of good faith and good medical practice. This is true of medical decisions generally, and is no less true of a decision to withhold medical treatment from an incompetent patient. When a court is properly presented with the legal question, whether treatment may be withheld, it must decide that question and not delegate it to some private person or group. Subsidiary questions as to how to carry out the decision, particularly purely medical questions, must almost inevitably be left to private decision, but with no immunity for action taken in bad faith or action that is grievously unreasonable."[4]

In considering when life-prolonging treatment may be withheld, the Court reviewed the facts of this case and concluded that the nature of the patient's condition (physical and mental), and the nature of the proposed treatment with limited survival probable, justified the use of the "substituted judgment" standard as described in the previous column. The Court concluded that the standard has been properly applied in the Spring case.

The Spring case represents the best formulation to date of the competing concerns and interests involved in medical decision making for the incompetent adult. It should be studied carefully by all interested in formulating an acceptable policy in Connecticut.

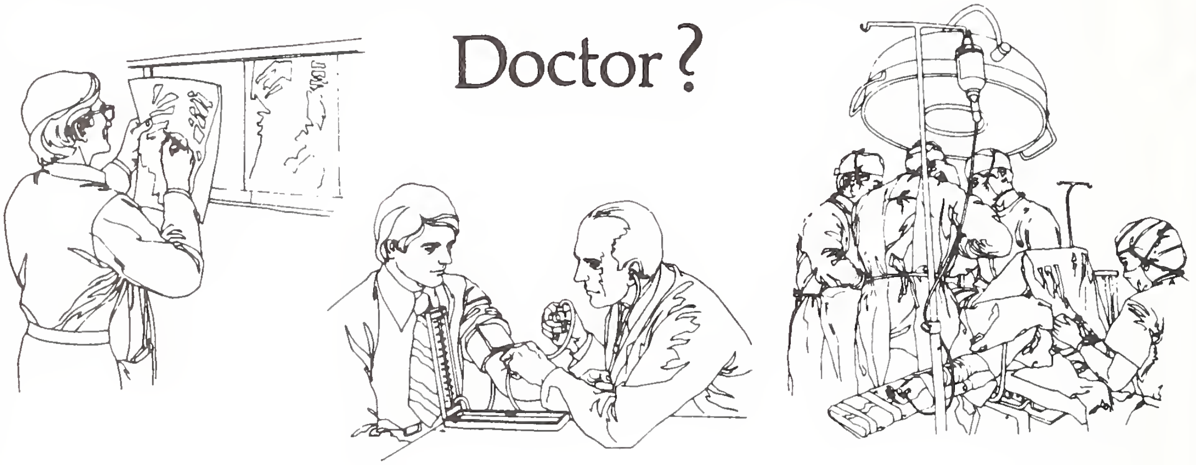
REFERENCES

1. *In the Matter of Earle N. Spring*, 405 N.E. 2d 115 (1980)
2. *Superintendent of Belchertown State School v. Saikewicz*, 370 N.E. 2d 417 (1977)
3. *In the Matter of Earle N. Spring*, 405 N.E. 2d 115 (1980) p. 121
4. *Ibid.*, p. 122

---

JOSEPH M. HEALEY, J.D., Assistant Professor, Department of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington.

Have you considered participation, Doctor?



YOU SHOULD KNOW THAT:

- The maximum allowances in the Century Contract Comprehensive Schedule of Services have been increased twice in the last 10 months. The increases, in the aggregate, amounted to 35.8%.
- It is the goal of Blue Cross and Blue Shield to update the Century Contract schedule on an annual basis.
- Participating Providers receive prompt payment for covered services directly from Blue Cross and Blue Shield.
- Participation can reduce receivables and eliminate the need to bill patients in many instances.
- Over one million Connecticut citizens are Century Contract members for whom claims totaling $68.4 million were paid in 1979.
- Your patients that are Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Physician, please write or call:

Write:
Blue Cross & Blue Shield of Connecticut
Professional Relations
Box 1930
New Haven, CT 06509
Call:
New Haven area: 777-4481
Toll free: 1-800-922-1742

Blue Cross
Blue Shield
of Connecticut

® Reg. Mark Blue Cross Assn.
®' Reg. Mark Blue Shield Assn

**Connecticut Medicine**
*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
Florence Keller, *Woodbridge*
James D. Kenney, *New Haven*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*
Norman A. Zlotsky, *Rockville*

# EDITORIALS

## Nurse-Physician Joint Practice

Joint Practice (Nurse-Physician collaboration for patient care) was tried at York Hospital with generally positive results. York Hospital is a small rural community hospital of 68 beds in southern coastal Maine. The hospital was selected by the National Joint Practice Commission, and supported by a grant from the Kellog Foundation, to be one of four hospitals for a pilot project to demonstrate Joint Practice.

York Hospital is a general hospital, made up of two nursing units, both of which have combined medical and surgical patients. In addition, there is a small Intensive Care Unit. A 22-bed nursing unit was selected for the pilot project. The medical staff at York Hospital is composed of about 20 full-time physicians, encompassing specialities of family practice, medicine, cardiology, urology, orthopedics, and general surgery. Most of the physicians have been affiliated with the hospital for less than six years, and are for the most part recently trained and younger physicians.

Once the decision was made to try Joint Practice at York Hospital, it took approximately six months before the project was actually underway. During this time a Joint Practice Unit Committee made up of physicians and nurses established policies for the unit. Considerable lead time was required for recruiting registered nurses appropriate for the unit, and for organizational matters to be resolved. The most notable changes in this particular pilot nursing-unit was the presence of only registered nurses caring for the patients and also primary nursing which meant that almost all of the patient's care was rendered by one nurse. In addition to this, the nurses' responsibilities were increased by broadening their scope of practice under the direction of the Joint Practice Unit Committee. This initially resulted in considerable discussion, but ultimately the nurses were given a fairly liberal hand at making decisions in patient care, which was a departure from the conventional range of responsibility given nurses in the other nursing units.

The results of this project have been quite favorable. For the most part, physicians have received the Joint Practice Unit very enthusiastically and have found that there are many bonuses. There were two or three physicians who preferred not to participate and had the option of admitting their patients to the other unit. The institution of primary nursing has probably been one of the most important features of the project and most beneficial to the physicians. In the conventional team nursing approach, a physician would conceivably have to seek out two or three different nurses who might be sharing in the care of the patient, whereas in primary nursing one nurse can give the attending physician all of the necessary information regarding the patient's course, medications, and treatments. Also, the nurse has greater knowledge of the patient's pyschosocial background which has been a tremendous aid in clinical management. Placing greater responsibility for patient care in the nurse's hands has been generally a very beneficial change. It has reduced the number of nuisance calls to the physicians for non-critical orders. In addition, giving nurses increased responsibilities has helped the void noticeable in a small hospital without house staff. The nurses are able to fill many of the functions that junior house staff might otherwise provide in the larger institution. As a result of these positive aspects, collaboration evolved. The increased responsibility and role of the nurse in patient care has not only been beneficial in the perspective of the physicians, but has had a tremendous effect on the nursing staff itself. Job satisfaction has shown tremendous gains, and many of the nurses have indicated that after having had the experience of Joint Practice they would refuse to function under any other system. Probably the most important feature of the Joint Practice Program is the increased satisfaction on the part of our patients. In the conventional team nursing unit, the patient usually leaves the hospital not remembering the names of more than one or two of the many people who cared for him in such a fragmented approach. However, patients in the Joint Practice Unit

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

can readily identify the nurse who was primarily responsible for their care.

The pilot practice is now about over, and our plan is to continue Joint Practice in the previously established unit with little or no modification. In addition, we are beginning to institute some of the features of the Joint Practice in our other nursing unit, particularly primary nursing. A hospital considering establishment of a joint practice unit should be cautioned, however, that the medical staff involved in such a unit must be generally agreeable physicians, willing and disposed to talk and listen to nurses. The committee directing such a nursing unit should include at least one skeptical physician. Furthermore, the nurses in such a unit must be well trained and capable of handling the increased responsibility expected of them. If these critical features are present, collaboration will occur and patients will be very definitely benefited by such an approach.

James H. Stuart, M.D.

*General Surgeon*
*York Hospital*
*York, Maine*

## Geriatrics and Manpower

Do physicians spend less time with elderly patients than they do with younger adults? One might guess that the duration would increase with the age of the patient, since the elderly tend to have multiple diseases, socioeconomic problems that may complicate treatment, atypical presentations, and emotional components requiring thoughtful interrogation and response.

A bit of survey data tells us that the answer is indeed "less time." I don't refer to the complaints of patients that physicians hurry them off. Rather, I look to the 1978 study by the Division of Research in Medical Education of the University of Southern California School of Medicine (Mendenhall et al., 1978). This one-time study of practicing physicians relied on logs they kept in two 3-day periods. The study showed a tendency for encounter-times to diminish with age of the patient.

This datum squares with my own observations and generates a paradox: our country appears to have a medical establishment that is out of touch with the needs of a growing group of actual and potential patients. The graying of America, one of the great demographic changes of modern times, is occurring and much of medicine is looking the other way.

Some 11 percent of the nation's population, the elderly, account for nearly 30 percent of personal health care spending in the United States. We can all wonder what they are getting for their money—and considering the taxes going into Medicare and Medicaid—*our* money. It surely is not skilled geriatrics.

Since Medicare began in this country one might have expected a sizeable increase in the number of physicians eager to profess knowledge in geriatrics. After all, 35 percent of visits to internists and family practitioners are accounted for by the elderly. Yet, according to a 1977 survey by the American Medical Association (AMA), fewer than 700 physicians out of the 364,000 in active practice label themselves as having a primary, secondary or tertiary specialty in geriatrics.

Only one in four of the self-reported geriatricians was certified in any specialty, whereas nearly two in three physicians nationally have a board certificate. The average "geriatrician" belonged to fewer professional societies than did the average physician, and almost one-third belonged to no professional society at all. Research interest? Well, only three were members of societies for clinical research.

In the same year as the AMA survey, relatively few medical schools had any major geriatric content in their curricula, according to an investigation by the Institute of Medicine (IoM), National Academy of Sciences. It recommended immediate efforts to enrich the geriatric and gerontologic content of medical school training and to introduce students and residents to long-term care in a variety of settings, including the nursing home and the home-health program.

The IoM urged schools to develop a cadre of faculty to teach gerontology and geriatrics. Subsequently, the National Institute on Aging created a Geriatric Academic Medicine Award to help support faculty members in conducting basic and clinical research in geriatrics.

The apparent mismatch of medical manpower and patient-needs prompted the 1980 report of the Rand Corporation, "Geriatrics in the United States: Manpower Projections and Training Considerations" (Kane et al., 1980). Taking note of population growth trends, especially above age 75, the Rand report forecasts a need for 8,000 to 10,000 physicians trained in geriatrics to meet academic, consultative, and some primary care needs in 1990 and 12,000 to 17,000 by 2030. (A moderate delegation of care responsibility to nurses, physician assistants, and social workers is assumed in this estimate, part of a set showing manpower needs under various conditions.)

The Rand report does not call for increasing the total number of physicians in training but rather for redistributing training efforts to produce geriatricians. Thus, whether one believes there will be a doctor surplus in the future or not, the Rand position is that considerable reorientation of medical training is necessary. I agree.

The IoM and Rand reports agree that a substantial influx of resources will be required to establish the academic milieu for the emphasis on geriatrics. The IoM and Rand reports diverge on whether geriatricians should be trained not only for teaching but for service.

The IoM position is that geriatrics be recognized as an academic discipline within relevant medical specialties. In Rand's opinion, "The current unsatisfactory quality of medical care of the elderly will not be greatly improved if geriatrics is confined to the academic teaching hospital. Improving care requires the leadership and participation of geriatricians in the community as well. . . ."

Both reports seek the bulk of care of the over-65 population in the hands of physicians trained within conventional specialties. It cannot be otherwise, given the demographic expectations. By 2030, the United States probably will have as many elderly aged 75 and older as it has in the entire 65+ population today, which is 25 million.

The public even now is eager to find professionals with geriatric knowledge. The demand is likely to grow. It will be up to medicine, nursing, and other professions to assure that persons claiming geriatric skills have the appropriate knowledge and abilities. This can be done in various ways. Among physicians, there is controversy about creating a board specialty in geriatrics. Is it absolutely essential? Would it be counterproductive? It is too early to say.

But it is not too early to say that preoccupation with the formal specialty issue diverts attention from the exigencies of bringing geriatrics into medical education. Active research programs are essential, too. We need to improve our diagnostic and therapeutic efficacy and our ability to maintain well-being. Research is essential to the academic vitality of any discipline. In geriatrics, it is desperately needed to enhance the intellectual base, and influence the way current and future physicians look at care of the elderly.

Another step lies, I believe, in affiliating academic medical centers and nursing homes to a far greater extent than currently witnessed. We need a counterpart on long-term care to the teaching hospital—a facility with services for outpatients and the well-elderly in addition to inpatients. House officers should have a required rotation through these teaching/research nursing homes. They would be places for research in chronic diseases and health maintenance, for the training of physicians, nurses, and many other health professionals, and for the application of new methods of medical and nursing care.

With such a model in operation, I would hope that nursing homes in general would improve. Physicians with experience in model homes might have a standard to apply to the care of the institutionalized and community-dwelling-elderly.

The IoM report made this comment:

"As health care spending for and by the elderly has increased, many questions have been raised about the availability, quality, and appropriateness of the health care services they receive."

It is about time that all of us in medicine start working on the answers with a sense of urgency.

Robert N. Butler, M.D.

*Director, National Institute on Aging,*
*Bethesda, MD*

REFERENCES

1. Mendenhall RC, Lloyd JS, Repicky PA, Monson JR, Girard FA, Abrahamson S: "A National Study of Medical and Surgical Specialties," JAMA 240:848-852 and 1160-68, 1978
2. Kane RL, Solomon DH, Beck JC, Keeler E, Kane RA: *Geriatrics in the United States: Manpower Projections and Training Considerations.* Santa Monica CA: Rand Corp., 1980
3. Institute of Medicine: *Aging and Medical Education.* Washington DC: National Academy of Sciences, 1978, 57 pp.

# Letters to the Editor

**Letters to the Editor are welcomed and will be published, if found suitable, as space permits. They must be signed by all authors, typewritten in double spacing (including references), submitted in duplicate, must not exceed 1½ pages in length and will be subject to editing and possible abridgment. To be considered for publication, letters referring to a recent *Journal* article should be received within six weeks of the article's publication date.**

## A WAITING ROOM "MALPRACTICE SHINGLE"

*To the Editor:* The new malpractice insurance policies are on our desks. My yearly premium is $14,000. I am an obstetrician/gynecologist.

With a mixture of anger, desperation and a bit of a feeling of relief we write out a hefty check for Aetna and adjust our fee schedule.

True, it could have been worse! The figure of an 80% increase was mentioned first. That has been slightly reduced. We now get a patient injury prevention plan, yet another committee to heat up the process of self-flagellation.

Every responsible physician accepts his central role in respect to malpractice and the importance of practice review committees. But the problem does not end there.

There is something wrong in the judicial thinking in this country in regard to "malpractice" and compensation thereof. It seems that a small group of lawyers is responsible for exploiting medical mishaps in an unfair way. Awards are excessive and unconscionable.

The medical profession is passive, pays the insurance premium, says little or nothing. The deplorable point is that we let our patients pay for all this and do not inform them.

My suggestion to you, my colleagues, is to put up a well designed shingle in your consultation room showing your annual malpractice premium. I have done this for the past year and was surprised how many were unaware of the magnitude of this issue and discussed the problem.

If we want a change in direction in resolving the malpractice compensation problem it will have to come through public pressure. Let's get the help of the people and let's move.

Frederick R. Behringer, M.D.

*New London, CT*

*(continued on p. 56)*

### BETTER LATE THAN NEVER

*To the Editor:* Sorry about the delay, gang.

I was thinking of letting this subscription die, but the November 1980 issue was a goodie—so please accept my $7.50 and my apologies for the delay.

Bill Ryan

*University of Pennsylvania School of Medicine*
*Philadelphia, PA*

# In Memoriam

**ABRAHMS, ELIOT R.,** George Washington University School of Medicine, 1974. Dr. Abrahms was a psychiatrist in the Hartford area since 1979 and was a member of the American Psychiatric Association. He was also a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Abrahms died November 19, 1980, at the age of 36.

**BAIRD, ROBERT D.,** Washington University Medical School, 1933. Dr. Baird was chief of the New Milford Hospital medical staff and a practicing physician in the Litchfield area since 1935. He was a veteran of World War II, having served in the U.S. Army Medical Corps in the European Theater from 1941 to 1945, and was a member of the Litchfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Baird died December 5, 1980, at the age of 71.

**BARILE, ALBERT W.,** Loyola Medical School, 1943. Dr. Barile was an internist in the New Haven area since 1950. During World War II, he served in the U.S. Army Medical Corps, attaining the rank of captain. He had served on the staff at St. Raphael's Hospital, Yale-New Haven Hospital and Griffin Hospital in Derby, and was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Barile died November 11, 1980, at the age of 61.

**deSUTO-NAGY, GYULA I.,** University of Budapest, 1935. Dr. deSuto-Nagy was a pathologist in the New Haven area since 1952. He was a member of the American Board of Pathology, the New Haven County Medical Association, and the Connecticut State Medical Society. Dr. deSuto-Nagy died August 5, 1980, at the age of 69.

**ELY, JULIAN G.,** Harvard Medical School, 1923. Dr. Ely was a general practitioner in the New London area since 1924. He spent 10 years as a staff surgeon at Lawrence and Memorial Hospitals, leaving to take up general practice in Lyme. He was health officer in Lyme for over 45 years, and was Salem health officer since 1940, and served as medical examiner for Lyme. Dr. Ely died December 2, 1980, at the age of 86.

**FOX, JAMES C., JR.,** Johns Hopkins Medical School, 1920. Dr. Fox was a neurologist in the Hartford area since 1924. During World War II he served in the U.S. Army Medical Corps attaining the rank of Colonel. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Fox died November 23, 1980, at the age of 85.

**HARTY, JOHN E.,** Georgetown University, 1937. Dr. Harty was a neuropsychiatrist in the New Haven area since 1938. During World War II he served as a lieutenant in the U.S. Navy. He was on the staff of St. Mary's Hospital and the courtesy staff of Waterbury Hospital and was instrumental in the formation of the psychiatric department at St. Mary's Hospital as its director. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Harty died October 13, 1980, at the age of 71.

**MILANO, ANN F.,** National University of Ireland, 1966. Dr. Milano was an internist in the New Haven area since 1966. She was a resident in internal medicine at St. Raphael's Hospital, where she also became a member of the staff, and was associated with the Health Department of the city of New Haven. She was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Milano died December 7, 1980, at the age of 43.

**PARLATO, MICHAEL A.,** Yale Medical School, 1908. Dr. Parlato opened a private practice in Derby in 1910 and was the attending surgeon at Griffin Hospital until 1921. In that year he built and operated a private hospital on Elizabeth Street in Derby. He closed the hospital in 1927 but maintained a private office at that location, and also remained senior surgeon at Griffin Hospital until his retirement in 1965. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Parlato died November 8, 1980, at the age of 94.

# SEMI-ANNUAL REPORTS TO THE HOUSE OF DELEGATES OF THE CONNECTICUT STATE MEDICAL SOCIETY

November 20, 1980

## Report of the President

W. RAYMOND JAMES, M.D.

The past six months have been most exciting and eventful. On the bright side, the science and technology of medicine continue to leap ahead at a rate that gives promise of solutions to most of our major health problems. Our medical schools have become great research centers turning out ever better trained and knowledgeable young physicians. We are happily trying to keep abreast of the times through burgeoning and improving CME programs. Prepayment and third party payment systems guarantee physicians very adequate incomes. However, rising health costs, increasing complexity of health delivery and increasing bureaucratic involvement in health planning and health delivery continue to pose challenges to our profession and Societies.

During the past few months, most of the activies of our Society have been over-shadowed by developments in the professional liability field as rates have increased greatly and give promise of rising an equal or larger amount in the next few years. Comparisons with other states and the first significant rise of last year, led us to prepare somewhat for the expected change this year. In August, a notification that an 88% premium increase would be necessary to cover the projected losses far exceeded our worst expectations. Extensive efforts by the Professional Liability Committee and the staff and officers of the Society, well publicized to our members, have presently reduced the increase to 60%. Negotiations on further reductions or return through sharing of investment income from reserves continue. We are also working on an expanded role in claim analysis and risk control.

Since the last report to members, we have initiated a poll to see if there is support for a physician-owned insurance company. In the meantime, we are proceeding along the lines previously reported. The future under our present professional liability tort system is somber. Excessively high costs are not only contributing to the rising costs of medical care, but are forcing changes in the character of the practice of medicine. Not only Connecticut and not only physicians, but everyone involved in health care must look for and work for a more equitable, less expensive and more just system of caring for those patients disabled through misfortunes in our health care system.

We have learned in the last half century that excessive involvement of government in our affairs is not always beneficial. No place is this better demonstrated than the National Health Planning Act and the Health System Agencies. Planning used to be a happy word in our hospitals in our communities. It meant, "When are we going to get this improvement?" "How are we going to pay for that improvement?" "How will we deliver better care to these people?" Unfortunately, the concept of growth and improvement are not evident in national health planning and the effect of the still embryonic health plans has been almost entirely the reverse. "Thou shalt not make any improvements." "Thou shalt not provide adequate beds." "Thou shalt reduce costs, no matter what." After some four years of effort, our State Health Planning Agency has yet to come up with a completed plan. The State Health Plan of 1978 has yet to be printed. Last week the Society gave testimony on revisions of the 1978 health plan. These will be used in developing the 1980 health plan to be printed in January. Of course, the revisions were not available in their entirety and those which were available came only a few weeks before the hearings, not allowing time for adequate study.

Many physicians have been discouraged by the anti-physician attitude of the boards, task forces and the various mechanisms of health planning. It is imperative, however, that physicians continue to participate. Even with limited participation, we can hope to influence health planning in a positive direction. Those physicians who have had the patience and fortitude to continue in these organizations should receive a vote of gratitude from all of us.

The Society has continued with an active legislative program. Led by a very effective Legislative Committee chaired by Dr. James Tierney, until his tragic death earlier this month, and ably supported by staff members and our lobbyist, we have enjoyed several years of successes with no major failures in the legislature. This year an attempt to dilute the Medical Examining Board so that the physician majority would be lost and to broaden the base for physician discipline by nonphysicians, was defeated. We still have a fairly effective State Medical Examining Board now functioning in cooperation with the State Department of Health Quality Control Division and with our county peer review committees. Attempts to increase the license fee were dropped early in the legislative process. Cooperation with the Connecticut Hospital Association led to the passage of a number of constructive bills including one which gave certain immunities to private gifts in hospital budgetary processes, passed by both houses unanimously over the veto of the governor. We were able to derail several Acts which would have greatly increased the powers of the Connecticut Cost Commission over the practice of medicine and the operation of hospitals.

Our effectiveness in this coming legislature will be quite important as we will be introducing legislation to take some of the sharp edges off the professional liability program. Suggested have been bills patterned after Indiana, Florida and other state laws which allow introduction of information on collateral sources of income, limit total losses, increase physician participation in analysis of cases, and assess defense costs to the plaintiff in case defense wins, and other areas still being explored.

We have continued to expand our influence and our base of knowledge and operation by increased liaison with other professional organizations. Several meetings with the Connecticut Hospital Association have continued study of hospital costs and review of cooperative programs on cost control. We are now discussing professional liability and legislative programs. A recent meeting with officers of the State Bar Association has again led to the formation of a liaison committee which will investigate joint problems and gain us some support for legislation in areas which may be of mutual interest. A new State Coordinator of Long Term care has expressed a willingness to meet with a special committee from our Society in the expectation that we can contribute constructively as this commission examines the many difficult problems involving long term care of our disabled elderly.

In order for organized medicine to have an effective voice in the dramatic changes of society and in health delivery, as well as in the science of medicine in coming years, it is imperative that we represent as many physicians as possible. It is difficult for many of us to understand that there are significant numbers of physicians who are not members of our national society and do not participate in our state and local societies. In order to address this problem more effectively, the Statewide Medical Planning Committee is now polling non-members to gain profiles which may give us some guidance as to how to attract additional members into the Society. This attempt will be furthered by a committee appointed by the Council with the charge to develop methods and programs to increase the membership of our county and state societies and the Auxiliary. This committee will also be concerned with bringing students and residents into the new sections which we trust will be established here today.

The activities of the State Society depend on the availability of physicians to do the work necessary to keep things going. This frequently imposes a burden of time beyond our ability to give. We do have a large untapped resource to help us in our many activities. Last spring the Auxiliaries in the State were very effective in contacting legislators and doing the work necessary to make our legislative programs successful. Activities in the public schools and fund raising for the American Medical Education Foundtion are jobs which the Auxiliary does better than we. Plans to increase the role of the Auxiliary have resulted in increased representation by Auxiliary members in a number of our committees and, hopefully, there will be some joint committee meetings in the near future. We are supporting additional educational programs for the Auxiliary and we hope a system can be found for joint billing which will increase the Auxiliary membership.

As traumatic as has been our local malpractice crisis, this has been far over-shadowed by changes in the national scene. The national swing toward fiscal conservatism and reduction of governmental roles has produced the most dramatic changes in the national political scene since the first years of the great despression. We can expect important changes in health care delivery in the next few years. Many questions raised during the campaign will have to be answered. Will the anti-university policies and reduced funding for education demonstrated in California and campaign rhetoric critical of the National Department of Education result in curtailment of important research programs in our medical schools and diminish support for the very high costs of medical school training programs, or will the emphasis on decreased government regulations result in greater freedom of action by our independent medical schools and continued support for the research programs which give promise of a brighter future? Will our national health planning agencies become increasingly concerned with cost control and cost reduction or will the emphasis on the lessor role of government result in a return of planning to local control with, perhaps, some federal support? Will budgetary restrictions result in diminished support for medical care for the aged and increased efforts to reduce hospital costs which will result in diminished quality of care for all of us or will we, as physicians, have a freer hand in determining the care of our elderly patients and our hospitals feel less of a heavy hand of government in their operation? Will we again find ourselves in the position of having to care for our handicapped and unfortunate, who must depend on welfare, at our own expense or will a system be evolved which will justly compensate those who contribute to the welfare of our poor, disabled and handicapped?

It seems reasonable to expect that physicians will be better heard by the new President and the new Congress. If so, we have a great opportunity and responsibility to exert influence in constructive directions. We must do our best to see that our medical schools maintain their integrity and independence, while continuing to receive the support necessary to guarantee that the poor as well as the rich may become physicians. Our great research programs must not be seriously hampered by lack of financial support from whatever source necessary. We must support programs which will guarantee that the poor and the elderly will have adequate medical care and that those who provide such care will be adequately compensated. We must push for locally controlled planning programs supported by physician participants which will promote the availability of increasingly good medical care without escalating costs.

To be successful, we will need greater support for the American Medical Association and its very excellent Washington department. We will need increased involvement with our legislators by the Society and the local Associations and we will need to keep our members informed and involved in the political process.

The excellent attendance and great interest in Society and professional matters evident in the county societies and committees which I have been privileged to attend these past months bode well for our profession.

We will continue to be occupied with professional liability and the fascinating questions of captive insurance companies and injury prevention; with the embryonic but growing public relation program; with the new student and resident sections and other Society activities, while we look forward with great interest to the second half of this busy year as the national experiment in conservatism unfolds and the roles our profession can play in the experiment become clarified.

---

# Report of the Council

ANDREW J. CANZONETTI, M.D., CHAIRMAN

The Council met four times since the annual session of the House of Delegates on April 30, 1980. Since all members of the House have received detailed copies of the minutes of each meeting, this report is limited to matters which it is felt merit special emphasis. At the conclusion of the report, as appendixes, there are published items of business which are transmitted by the Council to the House accompanied by recommendations of the Council. The number given to each of the appendixes is identical with the number of the related section of this report.

## 1. Public Information Program

For the benefit of any new members of the House of Delegates, I shall give some background information on the public information program. At the Semi-Annual Meeting of the House of Delegates held on November 15, 1979, it was voted "That the membership dues for 1980 be set at $150.00, $25.00 of which shall be set aside in the budget as a line item for a public information program. This program shall be reviewed by the Council and reported to the House. . . ." At the Annual Meeting of the House of Delegates held on April 30, 1980, the Chairman of the Council gave a comprehensive progress report on the activities undertaken to implement such a program. It was the Council's feeling that it was not in a position to recommend anything specific to the House at that time and recommended further study. The House approved the Council's recommendation "that the subject of a Public Information Program be referred to the Committee on Public Relations for continued study, as to the direction the Public Information Program should take, with a view of establishing priorities and specific recommendations concerning implementation of the program and to report back to the Council their deliberations for approval."

The Committee on Public Relations undertook this assignment and mailed out a questionnaire to all members of Society to seek guidance for suggested areas of public relations involvement. Two hundred and ninety seven responses were received and the replies tabulated. Fifteen categories were listed and the top four categories in which interest was expressed were as follows:

a. To inform the public that a visit to a private physician's office is much more economical than the hospital emergency room.
b. To inform the public of the new government trend toward sacrificing quality medical care in favor of cost effectiveness.
c. To disseminate, to the public, information on environmental hazards and the dangers of our current life style.

d. Deleterious effects of government regulations on medicine; i.e., National Health Planning Act.

A large number of Public Relations firms were investigated from which four were selected to make written and verbal presentations to the Committee on Public Relations. Prior to these firms making their presentations, they were provided with the results of the Committee's survey so that they could address themselves to how these objectives could be carried out. At its meeting on September 29, the Committee on Public Relations heard presentations from the four public relations firms and following the presentations, the Committee voted to endorse the firm of Lowengard & Brotherhood (Hartford) to be the CSMS Public Relations Consultant. Ms. Mary O'Connor, President, and Jerome Lowengard, Founder, were invited to attend the Council meeting on October 15 to comment on their proposal and reply to questions. Following discussion, the Council voted to approve the recommendation of the CSMS Committee on Public Relations that the firm of Lowengard and Brotherhood be engaged as the Society's public relations consultants; and that a public relations program be undertaken and done in stages, so that it could be evaluated as it progresses.

2. **Proposed Changes in the Bylaws Re: Medical Student and Postgraduate Physician Members in CSMS**

At the annual meeting of the House of Delegates on April 30, 1980, the Council submitted a series of Bylaw amendments to provide for medical student and postgraduate physician membership in CSMS. These Bylaws were tabled for consideration and action at this meeting of the House of Delegates. In accordance with the Bylaws, these amendments have been published in *Connecticut Medicine* and shall be taken off the table and acted upon by the delegates today. The Council recommends the approval of these Bylaws.

3. **Federal Trade Commission**

It was reported at the last meeting of the House in April, 1980, that an appeal from the order handed down by the Federal Trade Commission had been filed with the Second District Court of Appeals in New York. In a split decision, (2-1), the Federal Appeals Court has upheld the Federal Trade Commission order stating that the AMA Principles of Medical Ethics constitute restraint on the business activities of physicians. Before upholding the FTC order, the majority modified the language in one portion of the order that allows the AMA to adopt and enforce reasonable ethical guidelines governing false and deceptive practices by members. A second section was reworded to ensure that the AMA could continue professional peer review of fee practices by physicians. CSMS Counsel believes that the AMA will pursue it to the U.S. Supreme Court and that if CSMS were to participate in a test before the U.S. Supreme Court, costs would be minimal. Legal Counsel will keep the Council informed of any further developments.

4. **1981 Budget**

Following this report is the budget for 1981, as prepared by the Fiscal Subcommittee and approved by the Council. The Council carefully screened every item in the budget and despite inflation is recommending that there be no increase in dues. Dr. John Mendillo, Treasurer, I am sure, will be able to answer any questions. The Council recommends that the budget for 1981 be approved as submitted and that the membership dues be set at $150.00. It should be noted that $25.00 of this amount is set aside in the budget as a line item for a public information program.

5. **Professional Liability**

One of the primary concerns of the Society has been the professional liability situation in Connecticut. The Society's officers and councilors have spent countless hours reviewing the program and we are deeply indebted to the Committee on Professional Liability who have given yeoman's service to the problem. [The history of events has been mailed to the members in the CSMS Newsletter.]

At the October 15 Council meeting, Mr. John Dorsett of American Health Systems presented a written and verbal report on the professional liability alternatives available to CSMS and suggested that the following three alternatives should be examined:

"a. Formation of an insurance company to be domiciled in Connecticut.

b. Formation of an insurance company outside of Connecticut which would issue policies through another insurance company now entered in Connecticut. (A "fronting" arrangement)

c. Development of an arrangement with an established physician owned company to enter Connecticut as a CSMS sponsored insurer with the intention that once a large enough number of Connecticut physicians participated, the Connecticut group would be spun off a Connecticut Insurance Company.

The American Health Systems report suggested that CSMS should proceed to determine which alternative best suits the Connecticut situation and develop it by May 1, 1981. Then, if circumstances dictate, implementation of the alternative by October 1, 1981 will be feasible.

Following a lengthy discussion, the Council voted unanimously to approve the concept, as outlined by the American Health Systems report and to authorize the Committee on Professional Liability to proceed with AHS to get in place by May 1 alternate plans that could be implemented with dispatch. An Ad Hoc Committee of five Council members has been appointed to supplement the Committee on Professional Liability's negotiations with American Health Systems. Information on any new developments will be disseminated to the membership as soon as possible.

**6. Reports from Physicians Serving on State and Federal Agencies**

The Council continues to keep abreast of what activities are being carried on by the various agencies through reports presented by CSMS Council members serving as representatives on these

**7. Conclusion**

As indicated in the opening paragraph, only matters that are thought to be of major importance have been included in this report. Members of the House are urged to peruse the complete minutes of the meetings held since the annual meeting of the House of Delegates and the Chairman will answer questions about any of the items in this report or about any items recorded in the minutes of the last four meetings of the Council.

At this time, the Chairman expresses his sincere appreciation and thanks to all the members of the Council and Staff whose cooperation and assistance have been invaluable.

---

# Connecticut State Medical Society

## 1981 BUDGET

*The House of Delegates approved the 1981 Budget, as submitted, and that the membership dues for 1981 be set at $150.00.*

| **Income:** | 1981 Budget |
|---|---|
| Estimated Income from Dues (@ $150) | $615,000 |
| Estimated Income from Journal | 59,000 |
| Building Income | 6,600 |
| Interest & Dividends | 45,000 |
| Reimbursement, Collection of AMA Dues | 3,500 |
| Miscellaneous Income | 500 |
| | $729,600 |

| | | 1981 Budget |
|---|---|---|
| **Budget Allotments:** | | |
| *General:* | | |
| President of the Society (Honorarium) | | $ 1,750 |
| Chairman of the Council (Honorarium) | | 1,250 |
| Council Expense | | 3,500 |
| Delegates to AMA (6 Del., Pres., Pres.-Elect) | | 20,000 |
| Travel | $ 7,500 | |
| Lodging | 7,000 | |
| Per Diem | 3,000 | |
| N.E. Hospitality Suite (AMA Mtgs.) | 2,500 | |
| (Mtgs. Chicago & Las Vegas) | 20,000 | |
| Legal Counseling | | 5,000 |
| Legislative Counseling | | 12,500 |
| FTC Complaint, CSMS-NHCMA Defense | | 5,000 |
| Employees' Pension Fund | | 36,000 |
| Trustees' Administrators' Fees-Pension Fund | | 1,400 |
| Premiums for Employees Health Insurance Plans | | 9,500 |
| Reserve for Contingencies | | 15,000 |
| Annual & Semi-Annual Meetings | | 12,000 |
| David A. Grendon Memorial Fin. Aid Fund of CSMS | | 8,000 |
| General Insurance | | 1,000 |
| Public Information Program | | 102,500 |
| Committee Allotments, Dues, Etc. | | 14,825 |
| Public Health | 200 | |
| Legislation | 6,500 | |
| Liaison Comm. Pharm. Assoc. | 250 | |
| Cancer Coordinating Committee | 300 | |
| Conn. Adv. Comm. Foods, Drugs | 125 | |
| Mental Health | 100 | |
| Hospital Committee | 100 | |
| Third Party Payments | 100 | |
| AMA-ERF Campaign | 300 | |
| Perinatal Morbidity & Mortality | 250 | |
| Emergency Medical Services | 200 | |
| Insurance | 50 | |
| CME Comm. & Accreditation Program | 1,000 | |
| Coop. Comm. Med. Schools of Conn. | 100 | |
| Public Relations | 250 | |
| Council N.E. State Med. Soc. (Dues) | 175 | |
| Comm. Program Scientific Assembly | 200 | |
| Judicial Committee | 150 | |
| Liaison Comm.-Dept. Income Maint. | 150 | |
| Forum for Medical Affairs (Dues) | 150 | |
| Professional Liability | 1,000 | |
| Peer Review Systems | 300 | |
| Statewide Medical Planning | 300 | |
| Drug Abuse Educational Program | 100 | |
| Maternal Morbidity & Mortality | 25 | |
| Continuing Medical Care & Rehab. | 50 | |
| Allied Medical Services | 100 | |
| Medical Aspects of Sports | 200 | |
| Auxiliary to CSMS | 2,000 | |
| Miscellaneous Committees | 100 | |
| | $14,825 | |
| | | $249,225 |

| **Treasurer's Budget:** | |
|---|---|
| Printing & Postage (Coll. of Society Dues) | $ 1,750 |
| Printing & Postage (Coll. of AMA Dues) | 750 |
| Certified Accountants (Annual Audit) | 1,400 |
| Computer Services (Financial Reports) | 600 |

*(continued on p. 62)*

| *(1981 Budget continued)* | | 1981 Budget |
|---|---|---|
| Investment Counseling (Colonial Bank) | | 1,300 |
| Commission Expense (Hartford) | | 1,250 |
| Miscellaneous | | 50 |
| | | $ 7,100 |

**Executive Office Budget:**

| | | |
|---|---|---|
| Personnel | | $222,224 |
| Pension for Mrs. Creighton Barker 6/23/60 | | 3,000 |
| Office Operation: | | 38,300 |
| Staff Travel & Misc. Expenses | $ 9,000 | |
| Office Supplies | 1,000 | |
| Maintenance of Office Equipment | 500 | |
| Printing & Postage | 6,000 | |
| Telephone Tolls & Telegrams | 1,600 | |
| CSMS Newsletters | 10,000 | |
| Sportsmed Publication | 3,000 | |
| Subscriptions | 300 | |
| News Clipping Service | 400 | |
| Addressograph Serv. | 200 | |
| Xerox Rental | 1,750 | |
| Automobile Lease | 4,200 | |
| Miscellaneous | 350 | |
| | $38,300 | |
| Provision for Social Security Taxes | | 13,102 |
| Provision for Unemployment Taxes | | 1,368 |
| | | $277,994 |

**Journal Budget:**

| | | | 1981 Budget |
|---|---|---|---|
| Personnel | | | $ 40,828 |
| Manufacturing Cost & Distribution | | | 111,400 |
| Printing | | $100,300 | |
| Journal | $93,000 | | |
| Roster | 7,300 | | |
| Postage & Handling | | 6,600 | |
| Journal | $6,000 | | |
| Roster | 600 | | |
| Reprints | | 4,500 | |
| | | $111,400 | |
| Office Operation | | | 7,225 |
| Printing & Postage | | $ 2,300 | |
| Office Supplies | | 600 | |
| Telephone Tolls & Telegrams | | 1,000 | |
| Sales Tax | | 150 | |
| Editorial Board Meetings | | 125 | |
| Editor's Travel (250 mi. radius) | | 1,350 | |
| Maintenance of Office Equipment | | 350 | |
| Subscriptions | | 400 | |
| Copyrights | | 250 | |
| Libel/Slander Insurance | | 600 | |
| Miscellaneous | | 100 | |
| | | $ 7,225 | |
| Provision for Social Security Taxes | | | 2,715 |
| Provision for Unemployment Taxes | | | 468 |
| | | | $162,636 |

**Building Operation:**

| | |
|---|---|
| Municipal Taxes on Building & Equipment | $ 9,250 |
| Comprehensive Insurance | 1,625 |
| Custodial Services | 3,300 |
| Building Supplies | 600 |
| Electricity, Gas, Water | 3,000 |
| Fuel | 3,500 |
| Maintenance of Grounds & Snow Removal | 1,800 |
| Reserve for Depreciation | 2,200 |
| Basic Telephone Service—All Departments | 3,900 |
| Repairs & Replacements | 2,000 |
| Alarm System | 450 |
| | $ 31,625 |
| | $728,580 |

Anticipated Income over Expense - $1,020

# Report of the AMA Delegation

## Subject: 1980 Annual Meeting of the AMA House of Delegates

### Chicago, Illinois

### July 20-24, 1980

The House of Delegates acted on 249 resolutions and reports of wide interest and importance to all physicians.

Two hundred and seventy-nine delegates attended the meeting. The American College of Surgeons had withdrawn its representation (one delegate), but the House voted to keep its seat open, hoping that the ACS would reconsider. Well over 100 delegates are Fellows of the College, some officers of the ACS also. The group held an informal caucus to discuss the action of the College. Unanimously, they signed a petition requesting the College to reconsider its action. This unilateral action of the College, adopted by its Board of Regents, epitomized more than anything differences between the American Colleges (specialty) and the AMA—the former being elitist, hierarchial, and not democratic either in organization or methods of decision-making and voting, the latter democratic in action, organization, and voting. Representatives of both organizations, I think, will meet to see if differences can be ironed out. The ACS is the first and only one of the more than 50 specialty organizations in the AMA to reconsider its choice of joining the AMA. Though no formal reason was given for its action, the feeling of the Fellows in the AMA was that the ACS did not want to be under an umbrella organization (AMA).

First, as to Connecticut resolutions: (1) bioethics, (2) due process, (3) the elderly screening program, and (4) consultants in ethics for important issues involving the medical profession and society at large.

**Bioethics**

Our resolution that bioethics be included in the AMA Missions for *the 80s* was not adopted. The *Missions* are guidelines and principles for planning in the 80s and represent those priorities, also of budgetary importance, for the AMA. But since bioethics was not included among them, we felt, and still feel, that it should be because ethics are basic to the definition of any profession, especially the medical, and should be stated in the *Missions.* Importantly, the AMA efforts and budget will be apportioned among the *Missions.* The only speaker against it before the reference committee was a trustee speaking for the Board. The Board felt that the subject was included in *Mission 1,* "Scientific Policy and Information," and *Mission 4,* "Represent the Medical Profession." (We have been given to believe that the important Council on Planning of the House will, on its own, ensure that ethics is given a prominent position in the budgetary allotment.)

**Due Process**

Connecticut introduced a resolution in 1979 asking the House, and its Legal Department, to formulate guidelines for due process for physicians in whatever forum they should find themselves. The reason for introducing this resolution was that the 1971 Guidelines of the Joint Commission on Accreditation of Hospitals were revised in 1978 by the JCAH, without informing, or the knowledge of, the House of Delegates of the AMA.

It is my considered opinion that if the Revised 1978 Guidelines for Due Process as formulated by the JCAH had first been presented to the AMA House of Delegates, they would have been defeated. The JCAH believed that the 1971 Guidelines were too detailed and long, especially for smaller hospitals. However, to my knowledge the provisions of the 1971 Guidelines have been accepted by all courts in the country, if hospitals and medical staffs adhere to them. If the 1971 version were too detailed, the 1978 Guidelines are too general and incomplete. Also, they were largely formulated by the American Society of Hospital Attorneys, a relatively new organization made up of hospital attorneys who represent the viewpoint of hospitals. Some of them have expressed the opinion that there is too much "due process" for doctors, which calls for nothing more than fair hearings.

Though the Legal Department did formulate new guidelines at the previous meeting in response to our resolution, approved by the Board of Trustees, we, the reference committee, and the House considered them to be unsatisfactory and referred them back to the Board for further study. However, on recommendation of the Legal Department, the Board of Trustees again endorsed those that were rejected by the House at our last meeting. The Legal Department stated that "It is not possible to develop universal guidelines that meet fully all the requirements of the resolution." This time around they were adopted by the House. It is the opinion of the maker of the resolution that these AMA Guidelines are still inadequate, but they are the best we could get, as of now.

**Elderly Screening Program**

The concept of this resolution emanated from dissatisfaction with the program, both state and federal, by a family physician in Litchfield County. However, it brought forth a widespread dissatisfaction by delegates throughout the country. The House rejected the first report of the Board of Trustees in response to the resolution. This time, however, it adopted its revised report, with an amendment. Essentially, it called for furnishing test results to individual participants only, with each participant responsible for his/her report and obtaining needed medical care. An amendment, made by California was adopted, that the Board of Trustees consider medical legislation (for the next meeting) to give legal immunity to physicians receiving nonsolicited reports.

**Outside Consultants in Important Ethical Problems**

A committee of outstanding experts was appointed by the Judicial Council to act in an advisory and consultative capacity for the Judicial Council and House of Delegates in problems and issues of bioethics. This action was in response to a resolution introduced a year or so ago by the Connecticut delegation, endorsed by the Ad Hoc Committee to study the new principles of medical ethics.

**Principles of Medical Ethics**

Even at this session, five resolutions were introduced either modifying or rejecting the proposed revision formulated by the Ad Hoc Committee, the result of over two years of study and discussion by the House. There was a lot of discussion before the reference committee, mostly objecting. But, the committee recommended its adoption by the House. Whether or not it would be adopted seemed to hinge on how the delegates from California voted, its House having voted for rejection. But, most of them voted for acceptance. A two-thirds vote, or 184, was necessary; 194 voted for and 85 against the new version. Essentially, the revision and changes were made because certain provisions left the AMA open to legal suits, mainly by the Federal Trade Commission on the Sherman Anti-trust Act. The legal costs and pending suits were compelling. Also, the Principles can be amended or changed, in whole or part, by the House of Delegates by usual constitutional change procedure. The House was told that a review of the recently published *Opinions of the Judicial Council* revealed that none would have to be changed with the new version of the Principles.

The House of Delegates adopted the following Principles of Medical Ethics:

### PRINCIPLES OF MEDICAL ETHICS

PREAMBLE: The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following Principles adopted by the American Medical Association are not laws, but standards of conduct which define the essentials of honorable behavior for the physician.

I. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.

II. A physician shall deal honestly with patients and colleagues, and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.

III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.

IV. A physician shall respect the rights of patients, of colleagues, and of other health professionals, and shall safeguard patient confidences within the constraints of the law.

V. A physician shall continue to study, apply and advance scientific knowledge, make relevant information available to patients, colleagues and the public, obtain consultation, and use the talents of other health professionals when indicated.

VI. A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical services.

VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

### Special Society Representation

A recommendation by the Council on Long Range Planning and Development that the House be further opened up to applictions from specialty societies for direct representation (a delegate) was passed.

### Term of Office for the AMA President

A resolution that his tenure be lengthened from the present one-year term was defeated.

### Cost Effectiveness of State Certificate of Need Programs

A report by the Council on Medical Service was adopted which found little evidence of any CON impact on containing health care costs or capital investment. (This is contrary to the findings in a recent article in the *New England Journal of Medicine.*) It also recommends reaffirmation of opposition to the inclusion of physicians' offices under CON.

### Diagnostically Related Groups

A new method, the purpose of which is to decrease hospital costs, is being adopted for trial in some areas. It recommends that hospital reimbursement be made on a lump sum basis for diagnostically related groups (DRG). It is now being tried in some hospitals in New Jersey. For example, the shorter the stay for a diagnostically related group, the cheaper for the hospital, as it is paid a lump sum for the patient. Its converse: if the patient stays a long time, the hospital loses. This new idea for reimbursement will be studied and reported to the AMA House of Delegates at each session.

### Chiropractic

The House adopted a resolution urging the National Institute of Health or other appropriate agency to fund an independent and impartial study to evaluate the efficacy and study of chiropractic. This was adopted. Some proposed that the AMA do this, but it is obvious that any expression of opinion done by the AMA would be looked on as self-serving.

### Moratorium on Mandatory CME

In response to a resolution, the House supported a moratorium on all additional mandatory CME or any mandatory reexamination or recertification programs, pending evidence of their effectiveness in upgrading the competence of physicians. In so doing, the AMA will request the cooperation of all specialty societies and state medical societies.

### Licensure by Specialty

The Council on Medical Education reaffirmed existing policy opposing medical licensing laws that define medical specialty practice and limit a physician's practice by specialty. This was adopted by the House.

### Standard Immunization Record Form

The House adopted the policy that the AMA endorse the use of standard immunization form developed by the National Immunization Record Workshop and urged that state, county and national specialty societies and all physicians encourage state governments to adopt this form as the official immunization form of their state.

### AMA Dues

On recommendation of the Board of Trustees, the House adopted that dues rates of $250 for regular members, $35 for residents, $15 for medical students, and $125 for members in their first year of practice be continued for fiscal year 1981. The Resident Section of the House of Delegates urged the House adopt a program of dues for members in their early years of practice well below the $250 to encourage membership in the AMA. The American Bar Association has such a dues structure. The House, however, on the recommendation of the Board of Trustees recommended that the reduced dues program for physicians *in their first year of practice* be allowed to prove itself before consideration of an expansion that would include all physicians.

### Methods of Reimbursement

The House adopted a report by its Council on Medical Service which analyzed criticisms of physician reimbursement methods under Medicare. It recommended reaffirmation of current AMA policy supporting the "usual, customary or reasonable" fee concept and continuation of AMA efforts to ensure equitable levels of physician reimbursement under Medicare/Medicaid and to effect recision of the economic index.

The House further explained that currently, physicians providing service to Medicare beneficiaries are reimbursed on what is termed by DHHS a "customary, prevailing and reasonable" (CPR) charge basis. Medicare pays 80 percent of its defined "reasonable charge" for covered physicians' services to beneficiaries which are billed on a fee-for-service basis, after an annual deductible which is paid by the beneficiary. CPR reimbursement under Medicare and the "usual and customary or reasonable" concept supported by AMA are similar methods of determining physician reimbursement—in principle—in that the amount of payment under both is derived basically from the actual charges made by physicians. However, the two concepts differ in several important respects.

They differ, first, in their definition of "reasonable charge." Medicare defines a "reasonable charge" as the lowest of (1) the actual charge made by the physician rendering the service; (2) the physician's "customary charge" for that service; or (3) the "prevailing charge" for the service in that locality.

The "customary charge" is defined by Medicare as the individual physician's median charge for the service (an amount which would cover his charge at least half the times he performed the service). The "prevailing charge" is defined as the 75th percentile of customary charges for physicians of like training and skill, weighted by frequency, i.e., an amount which would cover the "customary charge" for the service in that area at least three-fourths of the times it is performed.

AMA policy, on the other hand, defines "reasonable charge" as either the "usual and customary" charge defined in Resolution 48 (C-68) or a charge deemed justifiable by the responsible medical association's review committee, based on circumstances of the individual case.

Medicare's CPR method also differs from AMA's UCR concept in that the amount of Medicare payments lag further behind current physician charges, since they are based on charge data up to two and one-half years old. Both the "customary charge" and the "prevailing charge" are calculated from data on physician's charges during the calendar year before the fiscal year in which the claim is submitted: therefore, Medicare payment for most physicians' services is based on what the physician was charging a year to two years previously, and is that far behind charges to the non-Medicare public from the start.

Finally, the two concepts differ in that—since 1976—the allowable yearly increase in Medicare payment is further limited by an "economic index" established by the Health Care Financing Administration. The "Economic Index" regulations, published in final form on June 16, 1975, established a maximum percent of increase in "prevailing charges" allowable for any year over the prevailing charges in effect during fiscal year 1973. Thus, the allowed yearly percent of increase is limited not only by actual increases in physicians' charges but by an economic index established by the Department of Health and Human Services, which is intended to reflect increases in the cost of doing business. The index operates on the assumption that 40 percent of a physician's income goes to expenses and 60 percent to net income. It allows an expense-related increase in the prevailing charge based on data on salary increases in non-medical service industries, on increases in housing and transportation costs, on wholesale price increases for drugs and pharmaceuticals, and (for miscellaneous costs) on consumer price index increases. An increase in the net component is allowed in proportion to increases in the earnings of production and nonsupervisory workers, adjusted to eliminate productivity increases. The "economic index" is calculated annually by HCFA and furnished to all carriers. For 1980 (July 1, 1979 to June 30, 1980), the economic index was set by HCFA at 53.3 percent. This means that prevailing charges in 1980 can be no more than 53.3 percent above the level of prevailing charges in 1973 (which were based on charge data from 1971)."

Accordingly, the Council recommends that AMA policy be retained, and that the Association devote greater emphasis to its legislative and other efforts to assure equitable and realistic levels of reimbursement for physician services under the Medicare and Medicaid program. Concentrated effort should be focused on the repeal of the economic index regulations.

### Health Planning Laws

In response to a resolution calling for the AMA to work to repeal PL93-641 and PL96-79, the National Health Planning and Health Resources Development Act and the 1979 amendments to it, the House adopted this policy:

RESOLVED: That the House of Delegates of the American Medical Association continue to stand committed to the repeal of PL93-641 and its amendments enacted in PL96-79, and continue to inform U.S. Senators and U.S. Congressmen of the AMA's position, urging them either to sponsor or support legislative action repealing the law; and be it further

RESOLVED, that the AMA urge all of its federated state medical associations to join in the continuing AMA effort to repeal PL93-641 and its amendments enacted in PL96-79; and be it further

RESOLVED, That until such time as PL93-641 and its amendments enacted in PL96-79 are repealed, the House of Delegates reaffirm present policy that the AMA should encourage its members to participate as individuals, or as members of appropriate organizations and institutions, in health planning, and in presenting definitive proposals for community and individual health, consistent with the law.

Furthermore, in regard to solicitation of non-federal funds by or on behalf of HSAs, the House adopted the following resolution:

RESOLVED, That the American Medical Association oppose solicitation or acceptance of non-federal funds by or on behalf of a Health Systems Agency; and be it further

RESOLVED, That the AMA request the Congress of the United States to enact legislation and the Bureau of Health Planning to prohibit fund solicitation activities or acceptance of such non-federal funds by any Health Systems Agency.

### CT Scanners

In response to resolutions about current restrictions by the Department of Health and Human Services on CT Scanner technology, the House adopted the following policy:

RESOLVED, That the American Medical Association recommends that CT scanning equipment should be readily available for patients; and be it further

RESOLVED, That efforts by Health Systems Agencies to block the acquisition of scanning equipment are deemed to be detrimental to the quality and cost effectiveness of health care; and be it further

RESOLVED, That a copy of this resolution be sent to each Health Systems Agency in the United States, the State Health Planning and Development Agencies, the State Health Coordinating Councils, and the Secretary of the United States Department of Health and Human Services.

### Health Insurance Legislation - 1980

There were two reports by the Board of Trustees and ten resolutions dealing with one or more aspects of national health insurance. The Board presents an up-to-date report on the subject at each meeting of the House, which has already adopted principles in dealing with it, but agrees with the Board that it should be given elasticity to meet issues and problems that arise between meetings. It adopted the following resolution:

RESOLVED, That the AMA continue to advocate in a positive manner the superiority of voluntary, free-choice method of medical and health care delivery compared to a system dominated and controlled by the federal government.

### Nursing Education

A report discussed the current trends and problems in nursing education and nursing services, and recommended that the present forms of nursing education be continued. The House again recommended "that the AMA continue to support hospital diploma, associate degree and baccalaureate nursing programs as they exist today and to support those changes which would lead to an adequate supply of nurses providing good patient care."

### Podiatrists and Hospital Privileges

In response to a resolution adopted at the previous session, the Board of Trustees made a report about the education of podiatrists. The House, however, was not satisfied with it and referred it back to the Board for a more exhaustive report. Though the AMA and APA do meet at times, there has been no satisfactory report given to the House describing the various levels of podiatric training and the requirements for certification for their American Board of Podiatric Surgery.

### Family-Life Education

The House adopted the following as policy:

RESOLVED, That the American Medical Association recognizes that the primary responsibility for family life education is in the home and additionally supports the concept of a complementary family life and sex education programs in the schools at all levels, at local option and direction; such programs should (1) be part of an overall health education program, (2) be presented in a manner commensurate with the maturation level of the students, (3) have professionally developed curriculae, (4) include ample involvement of parents and other concerned members of the community, and (5) utilize classroom teachers and other professionals who have shown an aptitude for working with young people and who have received special training.

**Joint Commission on Accreditation of Hospitals**

Six resolutions were introduced, their tenor being critical of the Joint Commission. The House adopted the sense of one: That the AMA Commissioners assure that JCAH policies have a positive effect on patient care and cost effectiveness, and that hospitals and medical staffs are protected against arbitrary and inflexible interpretation of JCAH standards. Also, important from the viewpoint of the House of Delegates, the Commissioners of the AMA on the Joint Commission must report to the House at each session the gist of discussion and policies adopted at meetings of the JCAH. This has not been done up to now.

AMA Delegation

Delegates - J. Alfred Fabro, M.D.
Orvan W. Hess, M.D.
Guy W. Van Syckle, M.D.

Alternate Delegates - Sidney L. Cramer, M.D.
Isadore H. Friedberg, M.D.
William A. Whalen, Jr., M.D.

President - W. Raymond James, M.D.

President-Elect - Andrew J. Canzonetti, M.D.

**COLUMBIA UNIVERSITY**
**COLLEGE OF PHYSICIANS & SURGEONS**
**and**
**ST. LUKE'S-ROOSEVELT HOSPITAL CENTER**

in association with the
International Society for the Study of Vulvar Disease
will present the second postgraduate course for clinicians on

**CUTANEOUS-VULVAR AND VAGINAL DISEASES**
**May 14, 15, 16, 1981**
New York Academy of Medicine New York City

*Under the Direction of*

HAROLD M.M. TOVELL, M.D. (Gynecology)
ALEX W. YOUNG, M.D. (Dermatology)

For the practicing dermatologist, gynecologist, and family practitioner. An interdisciplinary faculty composed of gynecologists, dermatologists, and pathologists will discuss the diagnosis and management of the common dermatoses, bacterial, parasitic and viral infections which affect the vulva. Sexually transmitted diseases will also be discussed. An in-depth review of vulvar dystrophies, premalignant, and malignant conditions will be presented. Pertinent diagnostic methods and specific therapeutic regimens will be emphasized.

Fee: $375; residents: $175 (with a letter from departmental chairman); includes lunches, course syllabus and slides of selected diseases. Approved for 18 credit hours in Category 1 of the A.M.A.'s Physician's Recognition Award, 18 cognates for A.C.O.G. Fellows and 18 prescribed credit hours by A.A.F.P. For application and information contact Dr. Elizabeth C. Gerst, Continuing Education Center, College of Physicians and Surgeons of Columbia University, 630 West 168th Street, New York, New York 10032; telephone (212) 694-3682.

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## SUMMARY OF PROCEEDINGS HOUSE OF DELEGATES—SEMI-ANNUAL MEETING

### Cromwell—November 20, 1980

### Reports and Resolutions

The House of Delegates received reports from the President, the Council, the AMA Delegation, Dr. Lawrence Pickett, Chairman of the Connecticut Medical Examining Board, and Dr. Lawrence Ahrens, Chairman of the CSMS Committee on Professional Liability. A number of resolutions were also received from the component County Medical Associations and individuals.

### Principal Actions Taken

(a) **Report of the President, W. Raymond James, Essex:** The House VOTED to accept the report of the President which highlighted the present challenges to the medical profession and how the CSMS was meeting those challenges. Included in his message was the effort made by the Society to alleviate the current professional liability insurance problems caused by the recent substantial rise in premiums. The full text of his report will be published in Connecticut Medicine.

(b) **Report of the Council, Andrew J. Canzonetti, Waterbury, Chairman of the Council:** The House VOTED to accept the report of the Chairman of the Council, which reviewed the activities of the Council since the last House of Delegates meeting. Special emphasis was made concerning the Public Information Program, the Professional Liability Program and proposed changes in the CSMS Bylaws re medical student and postgraduate physician members in CSMS. Action on the Council's recommendations are reported on later in this summary.

(c) **Report of AMA Delegation:** The House VOTED to accept and approve the report of the AMA Delegation, which was prepared by J. Alfred Fabro, Torrington. The comprehensive report contained all of the principal actions taken at the 1980 meeting of the AMA House of Delegates.

(d) **Amendments to the Bylaws Re: Medical Student and Postgraduate Physician Members in CSMS**—The House VOTED to approve the following Bylaw amendments which provide for Medical Student and Postgraduate Membership in the Connecticut State Medical Society:

ARTICLE IV—MEMBERSHIP
Section 5. STUDENT MEMBERS

*PRESENT BYLAW*

Any person whose legal or family residence is in the State of Connecticut who is a regularly enrolled student and a candidate for the degree of Doctor of Medicine in an acceptable medical school, as provided in Section 20-10 (Rev. to 1975) of the General Statutes of Connecticut, or any person who is a student in an acceptable medical school located in the State of Connecticut may become a Student Member of The Society. Also, physicians not licensed to practice medicine in Connecticut who are serving as interns or residents in hospitals in Connecticut, for the purpose of extending their education and not primarily for remuneration, may become Student Members of The Society. Such membership shall be obtained by applying to the Executive Director's office of The Society on a form provided for that purpose and shall become a Student Member on approval by the Executive Director's office of such application, such action to be subsequently reported to the Council. Student Members shall enjoy all of the rights and privileges of membership in The Society, except that they shall not be eligible to vote or hold office. Student Members shall pay no dues.

*PROPOSED AMENDMENT*

ARTICLE IV. Section 5

Repeal the present Section 5 in its entirety, and replace it with the following:

ARTICLE IV—MEMBERSHIP
Section 5. STUDENT AND POSTGRADUATE PHYSICIAN MEMBERS

Par. 1 Any person whose legal or family residence is in the State of Connecticut and is a regularly enrolled student and a candidate for the degree of Doctor of Medicine in an accredited medical school, as provided in Section 20-10 (Rev. to 1979) of the

General Statutes of Connecticut, or any person who is a student in an acceptable medical school located in the State of Connecticut may become a Student Member of The Society.

Par. 2 Physicians who are serving in postgraduate training in hospitals or medical schools in Connecticut may become members of the Society.

Par. 3 Membership shall be obtained by applying to The Society on a form provided for that purpose. A person eligible for student and postgraduate physician membership in The Society becomes a member upon receipt and approval by the Executive Director of The Society of dues prescribed by The Society unless he or she is exempted from payment of dues as provided in Article XII.

Par. 4 Such members shall enjoy all the rights, privileges, and responsibilities of membership in The Society, except as may be specifically set forth in these Bylaws.

### ARTICLE V—HOUSE OF DELEGATES
#### Section 2. COMPOSITION

Add a new subparagraph (d): delegates elected by the student members and postgraduate physician members according to the apportionment provided in Section 4 of Article V of these Bylaws.

### ARTICLE V—HOUSE OF DELEGATES
#### Section 3. ELIGIBILITY

Amend this section by adding the underscored portion to the present text, so that the new Section 3 will read: In order to be eligible for membership in the House of Delegates *except as a delegate elected by the Student Members or Postgraduate Physician Members,* a physician must have been an Active Member or Life Member of The Society for at least the two years immediately preceding the session of the House in which he/she is to serve.

### ARTICLE V—HOUSE OF DELEGATES
#### Section 4. APPORTIONMENT

Add a second paragraph as follows:

The number of delegates from the Student Members shall be one delegate and one alternate from each medical school in the state. The Postgraduate Physician Members shall be entitled to send from their constituent membership to the House of Delegates each year one delegate for every seventy, or fraction thereof of the number of members as recorded in the office of the Executive Director of The Society on December 31 of the immediately preceding year.

### ARTICLE V—HOUSE OF DELEGATES
#### Section 5. REGISTRATION - Par. 1. CERTIFICATION

Add a second paragraph as follows:

Before every session of the House of Delegates the Student Members and Postgraduate Physician Members shall deposit with the Secretary of The Society a certificate or list signed by the president, secretary, or duly authorized representative of the Student Members and the Postgraduate Physician Members, respectively, or the Executive Director of the Society, listing those members entitled to be seated in the House of Delegates.

### ARTICLE V—HOUSE OF DELEGATES
#### Section 5. REGISTRATION - Par. 1 VACANCIES

Add a second paragraph as follows:

When an elected delegate or the elected alternate from the Student Members or Postgraduate Physician Members is unable to attend a specified session, the Student Members and Postgraduate Physician Members may appoint a substitute delegate and alternate delegate.

### ARTICLE V—HOUSE OF DELEGATES
#### Section 12. PROCEDURE - Par. 3. RESOLUTIONS

Amend this section by adding the underscored portion to the present text, so that it will read as follows: Resolutions may be introduced by any Active or Life Member *or Student or Postgraduate Physician Member* of The Society, in compliance with the following provisions:

Amend subparagraph (b) by adding the underscored language:

Component county associations, *or the Student Member or Postgraduate Physician Member associations,* whose meetings are held later than the thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc. be considered regular business if they are received later than fifteen days prior to the date of the meeting.

### ARTICLE XII—DUES
#### Section 1. PRESCRIPTION

Add a second paragraph:

Annual dues for Student Members and Postgraduate Physician Members shall be prescribed for the ensuing fiscal year in an amount recommended by the Council and approved by the House of Delegates. Dues shall be an equal per capita assessment upon each Student Member as for each other Student Member, and upon each Postgraduate Physician Member as for each other Postgraduate Physician Member, except that persons who become Student or Postgraduate Physician Members during the latter half of a fiscal year will be assessed one-quarter of the respective annual dues for that fiscal year.

### ARTICLE XII—DUES
#### Section 2. PUBLICATIONS

Add the underscored language at the end of the paragraph:

Membership dues shall include subscriptions to "Connecticut Medicine" and such other publications of The Society as are intended for *distribution to all Active Members, Student Members and Postgraduate Physician Members.*

### ARTICLE XII—DUES
#### Section 3, EXEMPTIONS

Amend this paragraph as follows (additions are underscored, deletions are brackcted):

The dues of any Active Member may be remitted by vote of the Council on recommendation of a Councilor or Associate Councilor elected by the respective component association, provided there has been prior remission of dues by that association, or by vote of the Council on request of a Student Member or Postgraduate Physician Member. Honorary Members, Life Members *and* Associate Members (and Student Members) shall not be subject to assessment of dues, but may be charged for subscriptions to publications, registration fees at scientific sessions, and the like.

ARTICLE XII—DUES
Section 4. DELINQUENCY

Add a second paragraph:

A Student Member or Postgraduate Physician Member is delinquent if his/her dues are not paid by October 15 of the year for which dues are prescribed and shall forfeit membership in The Society if he/she fails to pay the delinquent dues within thirty days after notice of the delinquency has been mailed to his/her last known address by the Executive Director of The Society.

ARTICLE XV—ASSOCIATIONS OF STUDENT MEMBERS AND POSTGRADUATE PHYSICIANS

This article is entirely new.

Section 1 - DEFINITION

The Council shall sanction associations of Student Members and Postgraduate Physician Members. These associations shall meet between forty-five and sixty days prior to the annual meeting of the House of Delegates of CSMS for the purpose of election of officers and delegates to The Society and at such other times as they deem necessary.

Section 2 - BYLAWS

The Student Member and Postgraduate Physician Member associations shall have the power to adopt bylaws that are not in conflict with the Bylaws of The Society. In the event of an existing or apparent conflict, the Bylaws of The Society shall take precedence.

Section 3 - PROCEDURAL RIGHTS

Student and Postgraduate Physician Members shall be afforded all the procedural rights of due process as set forth in Section 7 of Article XIV of these Bylaws.

ARTICLE XVI AND ARTICLE XVII (Re-Numbering)

The numbering of the Articles dealing with Amendments and Parliamentary Procedure should be changed from Article XV and Article XVI to Article XVI and Article XVII, respectively, to reflect the addition of new Article XV.

(e) **Budget for 1981:** The House VOTED to approve the budget for 1981, as prepared and recommended by the Council, and to continue membership dues at $150.00 in 1981.

(f) **Resolution on Medical Eye Safety Checklist:** The House VOTED to refer the following resolution, introduced by the Connecticut Society of Eye Physicians, to the Council for study and dispensation:

RESOLVED: That the House of Delegates of CSMS urge all State Legislatures to pass a law requiring the completion of a Medical Eye Safety Checklist form for each patient having an eye examination by a nonmedical practitioner, and require that the patient be advised to seek medical evaluation or treatment by a medical doctor when certain signs or symptoms are reported by the patient or observed by the examiner.

(g) **Resolution on Title XIX Reimbursement:** The house VOTED to approve the following resolution concerning reimbursement practices:

RESOLVED: That the CSMS House of Delegates encourage the State of Connecticut to rapidly implement a program that would utilize a private carrier to handle Title XIX disbursement, allowing the State of Connecticut to determine recipient eligibility; and be it

RESOLVED: That the CSMS House of Delegates encourage the use of private carriers within the State for this purpose, thus facilitating CSMS's ability to cooperate with the carrier in the administration of this program; and be it further

RESOLVED: That this action of the CSMS House of Delegates be communicated to the Governor, the Secretary of the Office of Policy and Management, the Commissioner of Income Maintenance, and the Director of Health (Medical) Services in the Department of Income Maintenance.

(h) **CSMS Charter Revision:** In order to provide for representation of medical students and postgraduate physicians members in the House of Delegates, the House VOTED to seek the following Charter revision: (Add underlined words)

Section 3. The House of Delegates of the Connecticut State Medical Society shall be composed of, (1) the President, the President-Elect, the Vice-President, Treasurer and Secretary of the Society, (2) delegates to be elected annually as hereinafter provided by the several county medical associations in this State which heretofore have been and are affiliated with the Connecticut State Medical Society, (3) the members of the Council, and (4) such other delegates as may be elected pursuant to the Society's Bylaws.

(i) **Resolution on Designated Compensation for Medical Mal-Occurrence:** The House VOTED to refer the following resolution to the Council for referral to the appropriate committee for study and report back to the Council:

RESOLVED: That the Connecticut State Medical Society immediately set up a steering committee to examine the concept of a Medical Accident Compensation Act with the view of preparing a sample bill for the State Legislature and organizing the political means for enactment.

(j) **Resolution on Health Systems Agencies:** The House VOTED to approve the following subject resolution:

RESOLVED: That until there is documentation of the cost effectiveness of the health planning program authorized by Public Law 93-641 and amendments in Public Law 96-79, that the Connecticut Congressional Delegation be notified that the CSMS House of Delegates (1) opposes any increased federal funding for the HSA program and supports the appropriations legislation, currently before both houses of Congress, which would lower the present levels of spending; and (2) urges Congress to initiate or support legislation mandating "Sunset Review" of the Health Planning and Resources Development Program.

(k) **Resolution on Alternate Delegates to CSMS House of Delegates:** The House VOTED to approve the following resolution:

RESOLVED: That all alternate delegates receive invitations to attend all regular and special meetings of this House, and be it further

RESOLVED: That, Article V, Section 2 of the CSMS Bylaws be clarified to include specifically alternate delegates as a permanent class of ex-officio members of this House with all the privileges of this House except for that of voting.

(l) **Proposed Diagnostic X-ray Regulations:** It was brought to the attention of the House of Delegates that public hearings were being held on Diagnostic X-ray Regulations. The House VOTED to direct CSMS staff to obtain copies of these administrative regulations and to refer them to the appropriate CSMS Committee for study and action. The deadline for written comments on the subject is December 20 and the communication should be directed to the Commissioner of Health.

(m) **Resolution on Detoxification of Narcotic Patients in Connecticut:** The House VOTED to refer the following subject resolution to the CSMS Committee on Drug Abuse Education Program for study and report back to the Council:

RESOLVED: That the Connecticut State Medical Society requests the Connecticut State Department of Health and others involved with drug regulation to allow physicians to admit patients to general hospitals to treat and detoxify patients who are suffering from abusive controlled substances and, in addition, that physicians be encouraged to give continuing care to these patients.

## Presentations and Awards

**To CSMS Officers and County Councilors for Past Service:**

### OFFICERS

| | |
|---|---|
| Stuart Ragland, Jr., M.D., Colebrook | |
| Vice Speaker | 1977-1978 |
| Speaker | 1978-1980 |
| Jerome K. Freedman, M.D., New Haven | |
| Councilor-at-Large | 1979-1980 |
| Andrew J. Canzonetti, M.D., Waterbury | |
| Alternate Delegate to AMA | 1975-1979 |

### COUNTY COUNCILORS

Fairfield

| | |
|---|---|
| John J. McGarry, M.D., Darien | |
| Associate Councilor | 1974-1977 |
| Councilor | 1977-1980 |
| Edith M. Beck, M.D., Greenwich | |
| Associate Councilor | 1975-1980 |

New Haven

| | |
|---|---|
| Gioacchino Parrella, M.D., Milford | |
| Associate Councilor | 1976-1978 |
| Councilor | 1978-1980 |
| Mehdi S. Eslami, M.D., Waterbury | |
| Associate Councilor | 1974-1980 |

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### EMERGENCY ROOM

Seeking full time emergency physician; 102 bed hospital/ 23,000 visits/year; flexible schedule. Excellent backup all specialties. Attractive salary, full benefits, 4 weeks paid vacation, 1 week paid CME, 9 paid holidays. Connecticut license required. Send CV to Satya Agarwal, M.D., Dir., Emergency Dept., Rockville General Hospital, 31 Union St., Rockville, CT 06066.

### FAMILY PRACTICE

New Haven Area. Substantial solo practice of the late Dr. John C. Varrone is available for sale. Terms negotiable. Contact James E. Varrone, days 335-2511; evenings 239-7495.

For sale—Medical Family Practice. Five exam. rooms fully equipped with lab. 2,000 sq. ft. of space. Central CT community location. Contact Mrs. Michael Gualtieri, 55 Forest Ridge Rd., Waterbury, CT 06708.

Opportunity for a young Family Practitioner to take over an active practice on a cost sharing basis. Present Family Practitioner wishes to retire gradually over the next two years. Call 1-203-443-3778.

### INTERNAL MEDICINE

Broad based general Internal Medicine practice for immediate sale in prime young growing community; ideal neighborhood and schools ten minutes from University Hospitals; can assume five year lease in modern professional building. Suitable for aggressive Family Practitioner. Reasonable Terms. Send CV to CSMS/IM-MS.

### PEDIATRICS

Associates desired. Rapidly growing pediatric practice situated in modern office only blocks away from newly expanded hospital. Coastal retreats minutes away. Neonatology background desirable. Competitive starting salary. Many benefits, excellent coverage, equal time off. Send CV to CSMS/Ped.-KMP.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### ANESTHESIA

Jan. '81. Age 33. FLEX. Nat'l. bds., elig. MD and int.: India. Res.: (Surg.) Conemaugh Valley Mem., PA. Fellowship: Monmouth Med. Ctr., NJ. Six months specialized training in Pediatric Anes. at Children's Hosp., Med. Ctr., Ohio. Solo, grp. or assoc. practice in med. or sm. community. Four year's experience in Gen. Practice in India. Ramesh M. Nayak, M.D., 800 Sawyer Hall, 2910 Scioto St., Cincinnati, OH 45219.

Available now. Age 31. AB-elig. Presently in practice. MD: India. Int. and res.: Bronx Lebanon Hosp. Also res's.: Metropolitan Hosp., NY and Temple Univ. Hosp. Grp. or assoc. practice desired in CT. Rakesh R. Shah, M.D., 111-09 66 Rd., #3A, Forest Hills, NY 11375.

### FAMILY MEDICINE

Available immediately. Age 44. Reciprocity. MD: Tulane. Int. and res.: St. Pauls Hosp., Dallas, TX. Will consider all types of practice in CT. William F. Alexander, II, M.D., 138 Millville Ave., Naugatuck, CT 06770.

Available immediately. Age 76. Conn. license. MD: Hopkins. Int. Mem. Hosp. for Cancer. Res.: Charleston Gen. Hosp., W.V. Retired from Gen. Surg. then managed convalescent home until 9/80. Would like part or full time. Institutional or industrial practice desired in large or med. community. Raymond Lublin, M.D., 19 Fulton Place, West Hartford, CT 06108.

July '81. Age 30. Nat'l. bds., cert. Presently in practice. MD: Georgetown. Res.: Southside Hosp. Solo, grp., assoc. or teaching position in Northwestern part of CT. Med. or sm. community. Contact CSMS/FP-RJM.

Locum wanted for March and April '81. Family Practice office only, in Shoreline town. Contact CSMS/FP-RJNK.

### INTERNAL MEDICINE

Infectious Diseases: Available now. Age 41. FLEX. MD: Dublin Univ., Trinity Coll., Ireland. Int.: Regional Hosp., Ireland. Fellowship: Univ. of CA. Have postgraduate diploma from Britain in Pediatrics, IM and Infectious Diseases. Grp. or assoc. practice in large or med. community. Stephen J.D. Brooks, M.D., P.O. Box 33172, San Diego, CA 92103.

Cardiology: July '81. Age 29. Nat'l. bds., cert. MD: Univ. of Baroda, Kenya. Int.: St. Joseph's Infirmary, KY. Res. and fellowship: Univ. of Louisville affil. hosp. Like to limit practice to Card. Trained in Cardiac Catheterization, 2D and M mode Echo-cardiography, Nuclear Card. (Thallium and Blood Pool imaging), Exercise testing, Holter monitoring. Will consider all types of practice except industrial in large or med. community. Contact CSMS/IM/Card.-A.D.

Nephrology: Available now. Age 37. FLEX. AB-elig. MD: Univ. of Rome, Italy. Int.: Cabrini Health Ctr. Res.: NY Infirmary Hosp. Fellowship: Long Island Coll. Hosp., Jersey Shore Med. Ctr. Would consider doing IM only, but would prefer doing at least some Nephrology. Solo, grp. or assoc. practice in large or med. community. Richard Eanni, M.D., 19 Fernandex Dr., New Windsor, NY 12550.

Gastroenterology: July '81. Age 28. Nat'l. bds., cert. MD: Tufts. Int. and res.: Baystate Med. Ctr., Mass. Fellowship: Einstein. Grp., assoc. or institutional practice. Would like to be affil. with teaching hospital. Paul S. Farkas, M.D., 1935-24 E., Eastchester Rd., Bronx, NY 10461.

Feb. '81. Age 37. Conn. license. Nat'l. bds., cert. Presently in practice. MD. Columbia P&S. Int. and res.: Roosevelt Hosp., NY. Solo practice in med. or sm. community in CT desired. Contact CSMS/IM-WF.

Rheumatology: July '81. Age 30. Nat'l. bds., AB-IM-cert. MD: Univ. of Wisconsin. Int. & res.: Memorial Hosp., Mass. Fellowship: Univ. of North Carolina. Will consider all types of practice except industrial in large or med. community. Michael A. Friedman, M.D., 135 Loblolly Lane, Chapel Hill, NC 27514.

## INTERNAL MEDICINE - CONTINUED

Rheumatology: July '81. Age 30. Nat'l. bds., cert. MD: NY Univ. Int. and res.: Boston City Hosp. Fellowship: Brown Univ. Program-Roger Williams Gen. Hosp. Would be interested in eventually building up primarily Rheu. practice but willing to start with Gen. IM Grp. or assoc. practice. John Guttell, M.D., 27 Putnam Rd., Foxboro, MA 02035.

July '81. Age 29. Nat'l. bds., elig.-6/81. MD: PA State Univ. at Hershey Med. Ctr. Int. and res.: Geisinger Med. Ctr., PA. Grp. practice desired in med. community in CT. Contact CSMS/IM-JRK.

Pulmonary: July '81. Age 33. AB-cert. MD: India. Int. United Hospitals, NJ. Fellowship: VA Hosp., Brooklyn. Also did res.: in otorhinolaryngology in India. Will consider all types of practice in CT. Brijinder S. Kochhar, M.D., 8501 Fort Hamilton Parkway, #2A, Brooklyn, NY 11209.

Oncology: July '81. Age 29. AB-cert. MD: India. Int.: India and Detroit Macomb Hosp. Res.: Jamaica Hosp., NY. Fellowship: Roswell Park Mem., NY. Solo, grp. or assoc. practice in med. community. Dattatraya S. Prajapati, M.D., 88 Slate Creek Dr., Apt. #5, Cheektowaga, NY 14227.

July '81. Age 33. AB-elig. MD: Guadalajara. Int. and res.: College of Medicine and Dentistry of NJ. Grp. or assoc. practice in med. or sm. community in CT. Tim Whiting, M.D., 9 Beaumont Place, Irvington, NJ 07111.

Available now. Age 33. FLEX. AB-cert. MD: Tulane. Int. and res.: Children's and Adult Med. Ctr., CA. Grp., assoc. or institutional practice in large or med. community. Contact CSMS/IM-MMM.

Available now. Age 35. Conn. license. AB-elig. Presently in practice. MD: Guadalajara. Int.: Dalhousie. Res's.: Rutgers; Yale Med. Sch.-St. Mary's Hosp. Grp. or assoc. practice in med. community. Michael Salzman, M.D., 457 Riverside Dr., Cheshire, CT 06410.

## OBSTETRICS AND GYNECOLOGY

July '81. Age 29. Nat'l. bds., elig. MD: Temple. Int. and res.: Reading Hosp. and Med. Ctr., PA. Interested in joining a sm. grp. ideally with two other physicians in med. community. John C. Hughes, M.D., 417 Oak Terr., West Reading, PA 19611.

June '81. Age 33. AB-elig. MD: Univ. of Bologna. Int.: St. Joseph's Hosp., NY. Res.: SUNY-Buffalo. Grp. practice desired in large or med. community. Vincent Molinari, M.D., 144 Dellwood Rd., Amherst, NY 14226.

July '81. Age 28. Nat'l. bds., elig. MD: Boston Univ. Int. and res.: Univ. of Rochester affil. hosp.-Strong Mem. Hosp.; Highland and Genesee Hospitals. Grp. or assoc. practice in med. or sm. community. Native of New London, CT. Robert M. Spitz, M.D., 195 Hillendale St., Rochester, NY 14619.

Jan. or July '81. Age 37. AB-cert. Presently in practice. MD: Gondi-Shapoor Univ. Int.: Princeton. Res. and fellowship: Roosevelt Hosp., NY. Grp. or assoc. practice in CT. Contact CSMS/OB-GYN-FA.

July '81. Age 31. AB-elig. MD and int.: India. Res.: St. Univ. Hosp., Upstate Med. Ctr., NY. Grp. or assoc. practice in large or med. community. Will do both OB&GYN. Mohammed M. Mohiuddin, M.D., 215 Locksley Rd., Syracuse, NY 13224.

## ORTHOPEDICS

July '81. Age 39. MD: Italy. Int. and res.: United Kingdom. Also res.: Catholic Med. Ctr., NY. Grp. or assoc. practice in med. community. Contact CSMS/Orth.-JF.

July '81. Age 30. Nat'l. bds., elig. MD: Vanderbilt. Int. and res.: Montefiore. Solo or assoc. practice in CT. desired. Mark M. Kramer, M.D., 3450-12 Wayne Ave., Bronx, NY 10467.

## PEDIATRICS

Ped. and Ped. Cardiology: Available now. Age 31. AB-cert. MD: Seth Med. Coll., India. Int.: K.E.M. Hosp., India. Res.: Kings County Hosp., NY. Fellowship: UCLA. Grp. institutional or HMO in CT. Parameswaran S. Aiylam, M.D., 3520 Keystone Ave., #3, Los Angeles, CA 90034.

Available anytime. Age 45. Conn. license. AB-elig. MD: London Univ., England. Will consider all types of practice except solo in med. or sm. community. Been in practice overseas, went back for more training in Gen. Ped. Contact CSMS/Ped.-ZSAM.

Ped. & Neonatology: July '81. Age 30. Nat'l. bds. Presently in practice. MD: India. Int.: Cook County Hosp., Ill. Grp., assoc. or institutional in large or med. community. Mangala V. Betkerur, M.D., 10015 S. Hill Terr., 28/202, Palos Hill, ILL 60465.

Jan. '81. Age 28. FLEX. AB-elig. Presently in practice. MD: India. Int. and fellowship: Metropolitan Hosp., NY. Res.: Kings County Hosp., NY. Solo practice desired. Kaushik J. Pandya, M.D., 30-49 70th Street, Jackson Hts., NY 11370.

## SURGERY

Gen. and Vascular. Feb. '81. Age 31. FLEX. AB-elig. MD: India. Int. and res.: St. Elizabeth's Hosp., MA.-Tufts Univ. Sch. of Med., affil. hospital. Will consider solo, grp. or assoc. practice. S.G. Sankar, M.D., 36 Second Island Rd., Webster, Mass. 01570.

Gen./Colon & Rectal: Available now. Age 35. Presently in practice. FLEX. AB-cert. MD: Dow Med. Coll., Pakistan. Int., res. and fellowship: Henry Ford Hosp. Will consider all types of practice in large or med. community except industrial. Mainly interested in practice of Proctology but would do Gen. Surg. Jawaid Akhtar, M.D., 21634 Stratford Ct., Oak Park, MI 48237.

Gen. & Vascular: Aug. '81. Age 31. AB-elig. MD: Tehran Univ. Med. Sch. Int.: St. Clare's Hosp., NY. Res.: Wilson Mem. Hosp., NY. Fellowship: St. Luke's Hosp., Texas Heart Institute, TX. Grp. or assoc. practice in med. or sm. community. Dariush Vaziri, 7510 Brompton Court, #587, Houston, TX 77025.

## UROLOGY

June '81. Age 30. Nat'l. bds., elig. MD: Cornell. Int. and res.: NY Hospital. Solo, grp. or assoc. practice in CT. desired. Paul A. Church, M.D., 435 East 70th St., New York, NY 10021.

July '81. Age 31. Nat'l. bds., elig.-Urol. MD, int. and res.: NY Univ. Med. Ctr. Urol. res. rotation: Univ. Hosp., Bellevue Hosp., Manhattan VA Hosp., Mem. Sloan Kettering Hosp. for Cancer and Allied Diseases, Cabrini Health Care Ctr., all in NY. Solo, grp. or assoc. practice desired. Jeffrey Glasser, M.D., 166 E. 34th St., Apr. 19J, New York, NY 10016.

July '81. Age 35. FLEX. MD and int.: Univ. of Jabalput, India. Res.: Beth Israel Med. Ctr., NY, (surg. & urol.). Trained in microscopic surgery. Solo, grp. or assoc. type practice desired in med. or sm. community. Surapaneni P.R. Rao, M.D., 350 E. 17th St., #17E, New York, NY 10003.

PHYSICIANS NEEDED

The Navy is seeking physicians who want an alternative to the administrative burden and expense of private practice. Our modern medical facilities provide the latest techniques and equipment. Opportunities exist to do research on projects both exciting and clinically meaningful, including aerospace and submarine medicine, underwater physiology and environmental and preventive medicine. Professional allowances in addition to competitive salaries. Non-taxable quarters and subsistence allowances. 30 days' paid vacation earned each year. Insurance, medical, dental package.
For more information, contact:

Lt. Paul Quinn, MSC, USN
Officer Programs Office
135 Burnside Avenue East Hartford, CT 06108
(203) 528-9988 collect

**Psoriasis Treatment**
**PHOTOTHERAPY CENTER**

Photochemotherapy (PUVA) for psoriasis is available for appropriate patients in an ambulatory setting. We have openings for patients with extensive psoriasis who would benefit from therapy with the combination of long wave ultraviolet (UV-A) and Psoralens (PUVA).

This is a new and investigational mode of therapy under an IND with the FDA.

For information contact:

**Adult & Adolescent Dermatology PC**
**Ronald C. Savin, M.D.**
**123 York Street**
**New Haven, Conn. 06511 865-6143**

### CLASSIFIED ADVERTISING RATES

$40.00 for 25 words or less; 50 cents for each additional word.
$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.
No agency commission on classified advertising.
Closing date: Copy must be received by the first day of month preceding month of issue.
A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

FOR RENT: Professional office, 100 Retreat Avenue, Hartford, Conn., 575 square feet, close proximity Hartford Hospital. Inquire 549-1900.

FAMILY PRACTITIONER sought to replace very busy General Practitioner in small coastal New England town. Office is fully equipped and privileges are available in our 150 bed community hospital.

---

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE.* The *JOURNAL* does not hold itself responsible for statements made by any contributor.

REPRINTS are available at an established schedule of costs. A reprint rate and order form is sent to the author with his page proofs.

ALTHOUGH all advertising material accepted is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to: *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

*CONNECTICUT MEDICINE* is the official publication of the Connecticut State Medical Society, a voluntary non-profit association organized for scientific and educational purposes, published monthly for members of the Connecticut State Medical Society.

# Evaluation of Neck Mass: Computed Tomography

YUNG H. SON, M.D.

ABSTRACT—Computed tomography (CT) scan of a neck mass larger than 3.0 cm. can provide useful information regarding the mass location, volume, extent of invasion and relationship with critical anatomical structures. However, a mass of less than 3.0 cm. in size is discerned with some difficulty by the present-generation scanner.

The proximity of a mass to the major vessels or laryngotracheal airway and bony landmarks can be assessed with ease and complications during or after irradiation can be predicted. While vascular invasion can be estimated, intravascular penetration can not be ascertained without contrast medium.

In general, CT scan be beneficial in the head and neck tumor work-up and treatment planning.

Computed tomography (CT) scanning has been increasingly popular in the head and neck tumor evaluation.[1-5] Jeldon et al used CT scan for radiation therapy planning and computerized composite isodose printout in the head and neck tumor treatment.[6] Adequate assessment of a neck mass during the head and neck tumor work-up is in great demand but there has been no useful neck mass evaluation method commensurate with present-day diagnostic sophistication.

Needless to say, the nodal size, number, location, histological status and, above all, the depth of invasion in relation to other anatomical landmarks is critical in selecting the treatment modality sequence which will influence the ultimate prognosis. Identification of the mass or nodal proximity to the neighboring anatomical structure can provide a useful guideline not only for the head and neck surgeons but for the radiation therapists in facilitating the radiation field implementation, proper electron energy selection, interstitial radiation therapy planning and spinal cord shield application.

Since early 1978, CT scan of the neck has been adopted as part of the advanced head and neck tumor work-up at one of the Yale Medical School affiliated hospitals. Presented are several CT scan features with its usefulness as well as limitations.

## Case Reports

Case 1:

An 84-year-old man presented a $T_1N_3$ poorly differentiated squamous cell carcinoma of the right vallecula. CT scan revealed an 8.0 x 8.0 cm. (measured from the grid film) homogeneously dense mass in the right neck. The mass obliterated the neighboring structures invading the right side of the larynx displacing the thyroid cartilage and compressing the airway underneath. The carotid artery and jugular vein appeared to be incorporated by the tumor (Figure 1).

While electron beam therapy was being planned following megavoltage radiation therapy, the patient suddenly died of respiratory arrest.

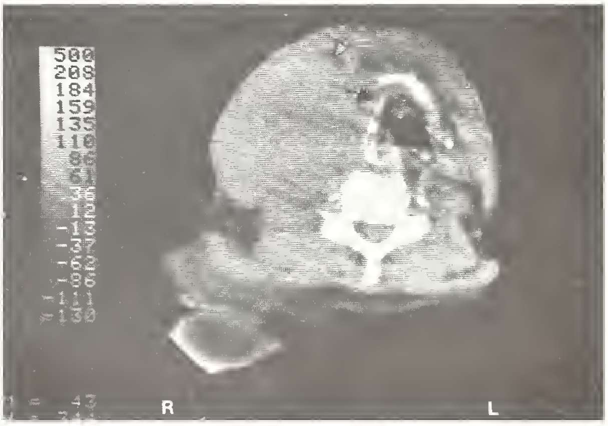


Figure 1

A large homogeneously dense mass occupies the entire right neck as indicated by two open arrows. The thyroid cartilage is fractured and dislocated as depicted by a closed arrow.

Case 2:

A 56-year-old man presented a $T_2N_3M_1$ well differentiated squamous cell carcinoma of the right side of the tongue. On clinical

---

YUNG H. SON, M.D., Associate Professor of Therapeutic Radiology, Department of Therapeutic Radiology, Yale University School of Medicine; Attending Physician, Yale-New Haven Hospital.

examination, the neck mass extended from the tip of the mastoid to the right supraclavicular fossa. Metastatic series was positive for bone metastasis and he remained hypercalcemic. CT scan revealed a right neck mass of 7.0 x 6.0 cm. (measured from the grid film) displacing the right oro-hypopharynx. Inter-muscular spaces appeared unobliterated. The airway, however, appeared to be compromised (Figure 2).

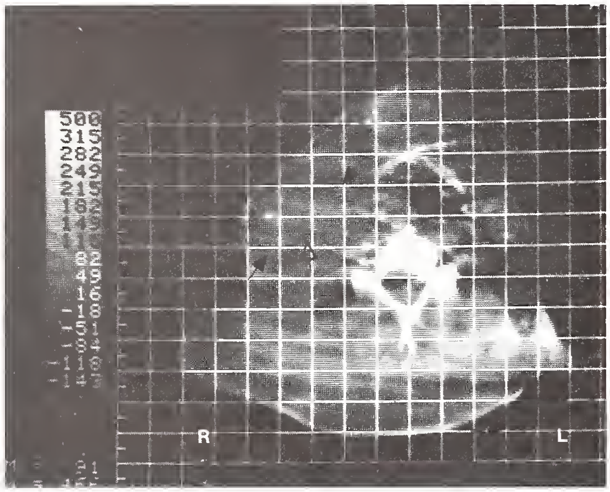


Figure 2
A large mass replaces the right neck as two closed arrows indicate. It incorporates the musculature and vasculature which may be in the low electron density area as pointed by an open arrow.

Case 3:
A 56-year-old male developed left pre-auricular and jugulo-digastric adenopathy. Examination revealed a $T_3N_{1b}$ poorly differentiated squamous cell carcinoma of the nasopharynx. CT scan showed two well circumscribed neck masses. The airway appeared unobstructed and undisplaced by the masses. (Figure 3).

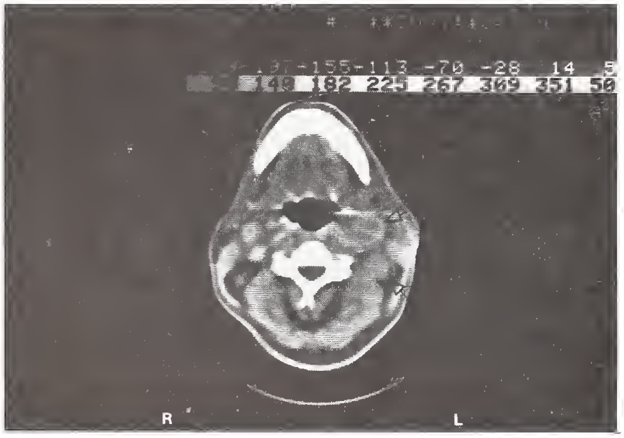


Figure 3
Two masses appear discrete as indicated by two open arrows. The vessels may be displaced but the airway appears intact.

Case 4:
A 64-year-old male developed a $T_3N_3$ well differentiated squamous cell carcinoma of the left posterior pharynx with a 9.0 x 8.0 cm. soft right neck mass and a 3.0 cm. firm left jugular node. CT scan showed a fairly well defined mass with central low electron density. The vascular lumen appeared to be compressed. The airway was not encroached by the masses. The left neck mass was not distinctly identified on the scan (Figure 4).

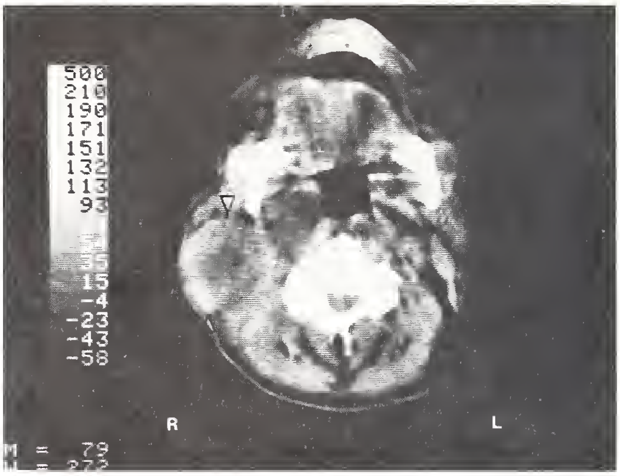


Figure 4
The right neck mass is fairly well visualized as outlined by two open arrows. Central low electron density is noted. The vessels may be compressed but airway appears uncompromised.

Case 5:
A 60-year-old male was treated for $T_2N_{1b}$ squamous cell carcinoma of the right tonsil and ipsilateral jugulo-digastric adenopathy 2½ years ago. Following two MeV photon energy irradiation of 5400 rads, the patient failed to return for interstitial radiation therapy. When he returned one year later, he presented a lesion in the soft palate, bilateral faucial pillars and entire posterior pharyngeal wall. He also presented a firmly fixed mass at the right upper neck. CT scan revealed the rim of the mass with central low electron density. The left pharyngeal gutter appeared to be encroached by the mass (Figure 5).

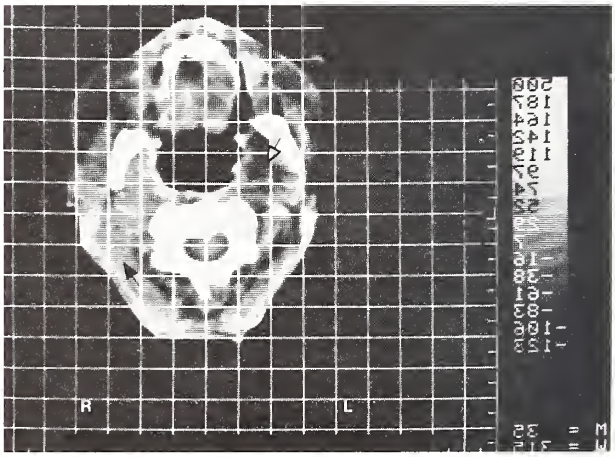


Figure 5
The rim of the right neck mass is visualized as indicated by a closed arrow. An open arrow shows furrowing crevices in the left oropharynx due to the tumor destruction.

Case 6:
A 58-year-old male presented a $T_3N_3$ right posterior oropharyngeal tumor and a right neck mass. The neck mass was firmly fixed to the angle of the mandible. CT scan showed a 5.0 cm. mass at the angle of jaw. The sternocleidomastoid muscle appeared to be incorporated in the mass. The vascular lumen appeared obscure. The mass appeared to reach the deep neck muscles (Figure 6).

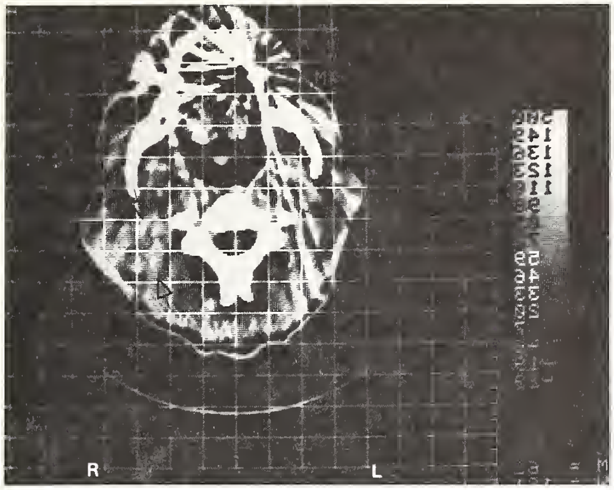


Figure 6
The right neck mass is faintly outlined. The superficial and deep musculature are probably incorporated in the mass. Two open arrows suggestively outline the mass.

Case 7:
A 62-year-old female developed a well differentiated squamous cell carcinoma of the right soft palate seven years ago. The lesion was successfully controlled with $^{60}$Co radiation therapy. Two years ago, she developed a second primary of poorly differentiated squamous cell carcinoma in the right floor of the mouth. She then underwent right hemimandibulectomy, en bloc resection of the floor of the mouth and right radical neck dissection. In the ensuing six months, she developed a 3.0 cm. mass in the right upper neck in the neck dissection fluid. CT scan demonstrated the oral cavity to be cavernous and right mandibular ramus to be absent. The right neck consisted of thin fibrous layers interposing a 3.0 cm. mass in the upper posterior neck (Figure 7).

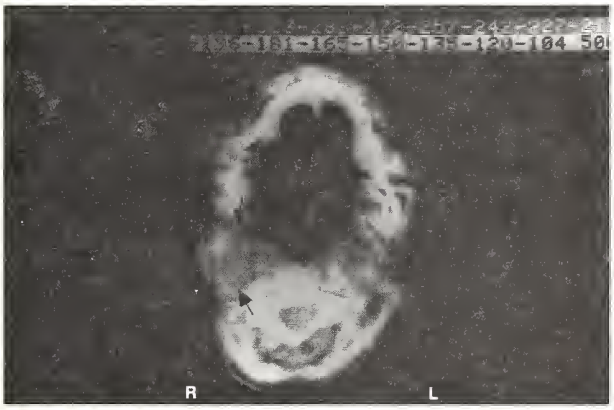


Figure 7
A hollow oropharyngeal cavity resulting from the previous surgery is noted. The top closed arrow indicates the mandibular stump. The right posterior neck mass is faintly visualized as outlined by two closed arrows.

Case 8:
A 60-year-old male presented a $T_2N_{1b}$ left tonsillar and faucial pillar tumor with a left upper neck node. CT scan showed an equivocal mass density in the left neck under the sternocleidomastoid muscle (Figure 8). Microscopic examination of the radical neck dissection specimen revealed 9 positive nodes, all in less than 3.0 cm. in diameter. None of these nodes were identifiable on the scan.

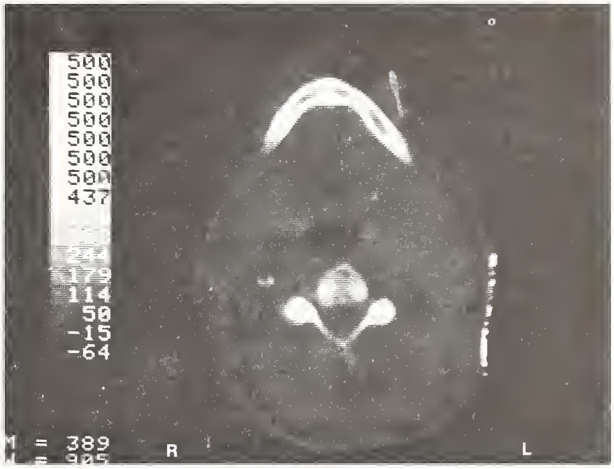


Figure 8
The left neck mass is faintly outlined under the sternocleidomastoid muscle as indicated by a closed arrow.

Case 9:
A 52-year-old male presented a large firmly fixed right neck mass which was located between the mastoid tip and the supraclavicular fossa. Examination revealed a lesion in the right base of the tongue, hypopharyngeal wall and the right base of the epiglottis constituting $T_3N_3$ stage. Tumor histology was first interpreted as poorly differentiated squamous cell carcinoma but later was revised as histiocytic lymphoma. CT scan revealed a 6.0 x 5.0 cm. mass (measured from the grid film) encroaching into the hypopharyngeal lumen. Airway was considerably displaced to the left but not severely compromised. No acute respiratory distress was encountered during the radiation therapy course.

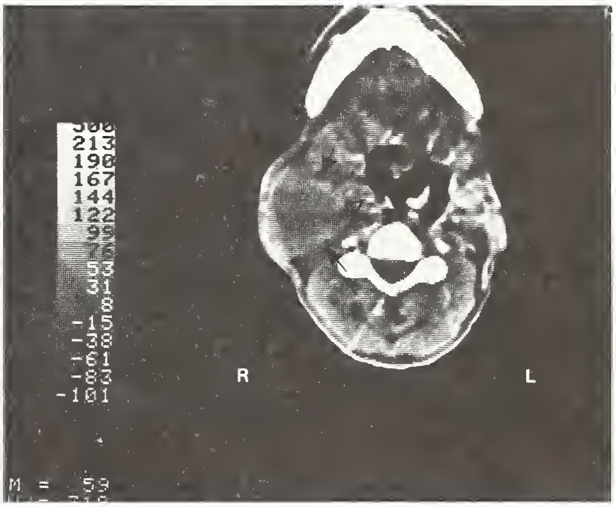


Figure 9
The right neck mass encroaches into the pharyngeal air column as indicated by an open arrow. The mass is encircled by a low electron density zone as indicated by closed arrows. The vessels may be severely compressed.

## Discussion

CT scan of the head and neck region in the presence of a palpable mass or node of greater than 3.0 cm. can provide practical information regarding the volume, depth and relationship with such anatomical landmarks as the mastoid, thyroid cartilage, hyoid bone, deep neck musculature, laryngo-tracheal airway, major vessels and spinal cord. Such information can assist in radiation therapy planning and surgical intervention. Unfortunately, the present-generation scanner is incapable of distinguishing a mass of less than 3.0 cm. when such information is critically needed.

CT scan may offer some clue as to the vascular intactness but vascular invasion can be best confirmed by the contrast medium study.

Laryngo-tracheal airway encroachment or displacement on CT scan may constitute a reliable forewarning sign of impending respiratory distress during the course of radiation therapy.

While an improved scanner with a higher resolution is awaited, a search for a better neck mass evaluation method must continue.

## REFERENCES

1. Bernardino ME: Computed tomography in ocular neoplastic diseases. Am J Roentgenol 131:111-113, 1978
2. Carter BL, Morehead J, Wolpert SM, Hammerschlag SB, Griffiths HJ and Kahn PC: Cross-sectional anatomy, computed tomography and ultrasound correlation. Sections 11-17, Appleton-Century-Crofts, New York, 1977
3. Salvolini U, Menichelli F and Pasquini U: Computer assisted tomography in 90 cases of exophthalmos. J Comp Assist Tomogr 1:81-100, 1977
4. Thawley SE, Gado M and Fuller TR: Computerized tomography in the evaluation of head and neck lesions. The Laryngoscope 88:451-459, 1978
5. Wortzman G and Holgate R-C: Computerized tomography (CT) in otolaryngology. The Larnygoscope 86:1552-1562, 1976
6. Jeldon GL, Chernack ES, Rodriguez-Antunez A, Haaga JR, Lavik PS and Dhaliwal RS: Further progress in CT scanning and computed radiation treatment planning. Am J Roentgenol 127:179-185, 1976

---

# Transient Hyperprolactinemia and Hyperthyroidism in Autoimmune Thyroiditis

RENATO N. MASCARDO, M.D. AND PAUL R.C. SULLIVAN, M.D.

**ABSTRACT—A twenty-nine-year-old woman had asymptomatic autoimmune thyroiditis associated with transient biochemical hyperthyroidism and hyperprolactinemia that presented initially as amenorrhea and galactorrhea. Serum thyroxine, triiodothyronine resin uptake, prolactin and antimicrosomal antibody titer were elevated. Twenty-four hour 131 I thyroid uptake was depressed. The biochemical hyperthyroidism, galactorrhea and amenorrhea resolved spontaneously. The mechanism of the relation of hyperthyroidism to transient hyperprolactinemia is unknown but such a relation should be considered in the diagnostic workup of amenorrhea-galactorrhea.**

The relationship of primary thyroid disorders to the function of the hypothalamic-hypophyseal-gonadal axis is well documented.[1] Primary hypothyroidism has been associated with galactorrhea-amenorrhea and hyperprolactinemia.[2,3] The elevated serum prolactin (PRL) concentration in primary hypothyroidism has been postulated to be mediated either by an increase in endogenous thyrotropin releasing hormone (TRH), which may be a physiologic prolactin stimulating factor, or by an enhanced response of the prolactin secreting cells in the adenophypophysis to endogenous TRH.[3] Primary hyperthyroidism also has been associated with menstrual dysfunction,[1] including oligomenorrhea, menometrorrhagia and amenorrhea, with elevated serum luteinizing hormone (LH) and follicle

---

RENATO N. MASCARDO, M.D., Juvenile Diabetes Foundation Fellow, Divison of Endocrinology and Metabolism, University of Connecticut Health Center. PAUL R.C. SULLIVAN, M.D., Clinical Assistant Professor, Division of Endocrinology and Metabolism, University of Connecticut Health Center, Farmington, CT: Assistant Attending Physician, Department of Medicine, Hartford Hospital, Hartford, CT.

Reprint requests to: L-2073, Division of Endocrinology and Metabolism, University of Connecticut Health Center, Farmington, CT 06032 (Dr. Mascardo).

stimulating hormone (FSH) in women[4] and normal serum PRL in men.[5] The association of transient autoimmune thyroiditis, amenorrhea-galactorrhea and elevated serum PRL concentration has not been previously reported.

### Methods

The serum concentration of T4, TSH, PRL, FSH and LH were measured by radioimmunoassay.[6, 8, 9, 10] The T3 resin uptake was measured by Mitchell's method.[7] Rudd's fluorometric assay[11] was used to measure serum cortisol. Urinary 17 hydroxycorticosteroid (17 OHCS) and 17 ketosteroid (17 KS) were determined by colorimetric methods.[12, 13] A TRH stimulation test was performed using synthetic TRH (Thypinone-Abbott), 250 ug i.v. Blood was drawn just prior to the TRH injection, and 30 and 60 minutes later for serum PRL and TSH determinations. Thyroid antimicrosomal antibody titer was determined by a tagged red cell method (Burroughs-Wellcome).[14]

### Case History and Results

A twenty-nine-year-old female physician was initially referred to one of the authors (Paul R.C. Sullivan, M.D.) for evaluation of secondary amenorrhea and galactorrhea. Menarche occurred at age 13 and menstrual periods were described as moderate and regular, occurring every 30-35 days. She took contraceptive pills from 5/71 to 11/72. A normal pregnancy occurred in 1975 after which menses resumed every 30-35 days. In 1976 she had a second pregnancy and delivered in 4/77. Menses resumed in 7/77 and were regular until 9/77 when she had an uneventful cholecystectomy. Menses ceased after surgery. In 11/77, she developed bilateral galactorrhea. A "$\beta$" human chorionic gonadotrophin test done at that time was negative. Serum PRL was 111 ng/ml (normal, 6-30). There was no history of headache, visual dysfunction, weight loss, loss of energy or ingestion of thyroid or iodine-containing medications.

Physical examination was negative except for bilateral galactorrhea.

Serum glucose, BUN, creatinine, electrolytes, protein electrophoresis, bilirubin, lactic dehydrogenase, aspartate aminotransferase, alanine aminotransferase and chest x-ray were within normal limits. Skull x-rays and sella polytomography were normal. Hormone levels initially and throughout the course of the illness are shown in the Table. Serum T4 (19.8 ug/dl, normal 4-11) and T3RU (38.27%, normal 22-34) were initially elevated and continued to be elevated for at least one week (1/5/78:T4=21.5, T3RU=35). Serum TSH, cortisol, LH and FSH concentrations and 24 hour urinary 17 OHCS and 17 KS levels were normal. Initial serum PRL concentrations were elevated (111 and 45.5 ng/ml). The serum antimicrosomal thyroid antibody titer was elevated (1:20,000). The 131 I thyroid uptake was suppressed (½ hr. = 1.8%; 24 hour = less than 0.5%) and the thyroid scan showed a poorly visualized gland with a small functioning nodule on the left lower pole. The patient complained of no neck pain, dysphagia, fever, heat intolerance, palpitations or nervousness, despite the biochemical hyperthyroidism. On 2/9/78, the serum T4 and T3RU were normal and the PRL was in the upper range of normal (28.5). A TRH stimulation test on 4/11/78 demonstrated a normal PRL response ( $\Delta$ = 15.1 ng/ml) and a suppressed TSH response. Galactorrhea ceased on 4/11/78 and menses resumed on 6/2/78 when serum T4, TSH and PRL concentrations were normal. She continued to have regular cycles for seven months after the resumption of her menses.

Table

SERUM HORMONE CONCENTRATIONS DURING THE COURSE OF AMENORRHEA-GALACTORRHEA

| *Date* | *T4 RIA (4-11 ug/dl)* | *T3 RU (22-34%)* | *TSH (7 mU/ml)* | *Prolactin (6-30 ng/ml)* |
|---|---|---|---|---|
| 11/20/77* | | | | 111.0 |
| 12/28/77 | 19.8 | 38.3 | 2.8 | 45.5 |
| 1/5/78** | 21.5 | 35.1 | | |
| 2/9/78 | 7.0 | 27.8 | | 28.5 |
| 4/11/78*** | 8.2 | 27.3 | 0.5 | 25.7 |
| 6/2/78**** | 5.1 | | 5.5 | 17.8 |
| 9/15/78 | 6.8 | | 5.2 | 6.4 |

* amenorrhea-galactorrhea present
** 131 I thyroid uptake = 1.8% ½ hr. and 0.5% 24 hr.
*** galactorrhea spontaneously resolves
**** menstruation resumes

### Comment

The association between the hypothalamic-hypophyseal-thyroid axis and prolactin secretion has been ascribed to the prolactin stimulating action of TRH. More recently, however, it has been reported that TRH does not play a physiologic role in PRL secretion in the rat. The relationship between prolactin secretion and thyroid disorders has been repeatedly documented in cases of primary hypothyroidism in which high serum TSH and PRL concentrations have been observed.[2, 3] The hyperprolactinemia in these patients was associated with galactorrhea, amenorrhea, pituitary enlargement and primary hypothyroidism. There have also been several reports of galactorrhea and/or amenorrhea occurring in thyrotoxic patients. Zondek and associates[15] reported five patients with thyrotoxicosis associated with galactorrhea and menometrorrhagia, although the biochemical data were limited to estrogen and FSH concentrations. They postulated that the elevated thyroid hormone levels could have maintained the galactorrhea initiated by the hyperestrogenic state. In reviewing 35 reported cases of nonpuerperal galactorrhea, Dowling et al[16] noted four patients with Graves' Disease associated with galactorrhea. Arroyo and Aubert[17] reported two cases of hyperthyroidism associated with galactorrhea. In both patients, thyroid antimicrosomal antibodies were undetectable and serum prolactin concentrations were not reported. Fromantin et al,[18] in reviewing the association of sarcoidosis with thyrotoxicosis, noted that transient hyperthyroidism could occur simultaneously with amenorrhea, galactorrhea and hyperprolactinemia. More recently, Barnett and Gould[19] suggested an association of hyperprolactinemia with Graves' Disease when two women who were being treated with bromocriptine for hyperprolactinemia developed clinical hyperthyroidism. They did not report measurements of thyroid antibodies in the serum. We have found no previous report in which thyroiditis with biochemical evidence of hyperthyroidism was associated with a high serum PRL concentration, galactorrhea and amenorrhea, all of which resolved completely with spontaneous remission of the thyrotoxicosis.

The findings of elevated T4 and T3RU, a suppressed 131 I thyroid uptake, a normal TSH and normal sized thyroid gland is observed in at least four disease entities: thyrotoxicosis factitia, painful subacute thyroiditis, painless subacute thyroiditis and autoimmune or Hashimoto's thyroiditis. Thyrotoxicosis factitia can be ruled out by the presence of a history of thyroid hormone ingestion. The transient course of the thyrotoxicosis is consistent with subacute thyroiditis but the absence of a tender thyroid suggested the diagnosis of "silent" or painless subacute thyroiditis.[20] However, the significantly elevated thyroid antimicrosomal antibody titer (1:20,000) is most consistent with autoimmune thyroiditis, which can present with a low 131 I thyroid uptake and biochemical hyperthyroidism, and follow a self-limited course.[21] Although a thyroid biopsy was not carried out in this patient, it is reasonable to assume that she did have Hashimoto's thyroiditis. Seven months after her last menstrual period, galactorrhea ceased at which time serum T4, T3RU and PRL were normal. Resumption of menses occurred two months later. Thus, it appears that the asymptomatic autoimmune thyroiditis with biochemical evidence of hyperthyroidism was associated with a simultaneous and transient PRL elevation, amenorrhea and galactorrhea. The mechanism by which these abnormalities occurred is unknown. It is unlikely that this patient had a generalized autoimmune disorder involving the thyroid and adenohypophysis as reported by Wanebo and Rawson.[22] Their patient had postpartum galactorrhea and later acute thyroiditis in association with severe systemic lupus erythematosus. Our patient, in contrast, was asymptomatic throughout the course of her illness and had no evidence of hypopituitary disease.

Although no serum estrogen determination was made in this particular case, Akande and Hockaday[4] reported higher serum estrogen levels in thyrotoxic women. The hyperestrogenemia, which they attributed to an increase in sex hormone binding globulin and free estrogen concentrations, could have induced estrogen receptors in the prolactin secreting cells of the pituitary gland, a phenomenon observed in GH3 clones of prolactin secreting rat pituitary cells.[23] Such an induction of estrogen receptors could have led to an increase in prolactin secretion.

In conclusion, diagnostic work-up of the galactorrhea-amenorrhea syndrome should include a careful evaluation of thyroid function. Furthermore, the occurrence of galactorrhea, amenorrhea, hyperprolactinemia and hyperthyroidism should suggest that the elevated serum prolactin level could be secondary to the hyperthyroidism rather than a pituitary tumor.

## REFERENCES

1. Hembree WC, Van de Wiele RL: Hyperthyroidism: Reproductive system, The Thyroid, Ed. by SC Werner, SH Ingbar, New York, Harper & Row, 1978, pp 757-772
2. Keye WR, Ho Yuen B, Knopf RF, et al: Amenorrhea, hyperprolactinemia and pituitary enlargement secondary to primary hypothyroidism. Obstet. Gynec. 48: 697-702, 1977
3. Onishi T, Miyai K, Aono T et al: Primary hypothyroidism and galactorrhea. Amer J Med 63: 373-378, 1977
4. Akande OE, Hockaday TDR: Plasma concentrations of gonadotropins, estrogen and progesterone in thyrotoxic women. Brit J Obstet, Gynec 82:541-55, 1975
5. Turkington RW: Serum prolactin levels in patients with gynecomastia, J Clin Endoc Metab 34:62-66, 1972
6. Premachandra BN, Ibrahim II: Proceedings of symposium on radioimmunoassays and related proceedings in medicine, Vienna, International Atomic Energy Agency 2:141, 1974
7. Mitchell ML, Harden AB, O'Rourke ME: The in vitro resin sponge uptake of triiodothyronine - 131 I from serum in thyroid disease and in pregnancy. J Clin Endoc Metab 20:1474-1483, 1960
8. Utiger RD: Radioimmunoassay of human plasma thyrotropin. J Clin Invest 44:1277-1286, 1965
9. Midgley AR: Radioimmunoassay: A method for human chorionic gonadotrophin and luteinizing hormone. Endocr 79:10-18, 1966
10. Rudd BT, Sampson P, Brooke BN: A new fluorometric method of plasma cortisol assay with a study of pituitary-adrenal function using metyrapone (SU-4885). J Endocr 27:317-325, 1963
11. Midgley AR: Radioimmunoassay for follicle stimulating hormone. J Clin Endocr Metab 27:295-299, 1967
12. Golub OJ, Sobel C, Henry RJ: Comparative study of the 17 ketogenic, Glenn-Nelson and Reddy methods for the determination of C21 urinary steroids. J Clin Endocr Metab 18:522-530, 1958
13. Metcalf MG: A method for measuring the urinary metabolites of cortisol and of 11-desoxycortisol, N Z Med J 63:384, 1964
14. Abreau CM, Vagenski AG, Roti E et al: Clinical evaluation of a hemagglutination method for microsomal and thyroglobulin antibodies in autoimmune thyroid disease. Ann Clin Lab Sci 7:73-78, 1977
15. Zondek B, Bromberg YM, Rozin S: An anterior pituitary hyperhormonotrophic syndrome. J Obst Gynec Brit Emp 58: 525-537, 1951
16. Dowling JT, Richards JB, Freinkel N et al: Nonpuerperal galactorrhea, Arch Int Med 107:886-893, 1961
17. Arroyo H, Aubert L: Hyperthyroides avec galactorrhee et amenorrhee. Ann Endocrinol (Paris) 33:49-52, 1972
18. Fromantin M, Gauter D, Quercey E et al: Hyperthyroidie, sarcoidose, syndrome amenorrhee, galactorrhee d'apparition simultanee chez une meme malade. Ann Med Interne (Paris) 126:853-856, 1975
19. Barnett AH, Gould MI: Hyperprolactinemia and Graves' disease. Lancet 2:1210, 1978
20. Papapetrore P, Jackson IMD: Thyrotoxicosis due to "silent" thyroiditis. Lancet 1:363-365, 1975
21. Gluck FB, Nusynowitz ML, Plymate S: Chronic lymphocytic thyroiditis, thyrotoxicosis, and low radioactive iodine uptake. New Engl J Med 293:624-628, 1975
22. Wanebo HJ, Rawson RW: Lupus erythematosus complicated by the Chiari-Frommel syndrome and autoimmune thyroiditis. Arch Int Med 124:619-622, 1969
23. Tashjian AH, Hinkle PM, Dannies PS: Control of growth hormone and prolactin production by clonal strains of pituitary cells. In Endocrinology: Ed. by R.O. Scow, Amsterdam, Excerpta Medica, 1973, pp 648-654

# Current Concepts in the Surgical Treatment of Voice Disorders

ROBERT J. CARPENTER, III, M.D. AND G. GORDON SNYDER, III, M.D.

ABSTRACT—A variety of procedures are now available for the treatment of the patient handicapped by laryngeal airway and phonatory symptoms. To derive maximum benefit, these patients should be evaluated by an Otolaryngologist and Speech Pathologist familiar with these disorders and the techniques of rehabilitation. The procedures described have a low morbidity and a high success rate and are readily accepted by most patients.

## Introduction

The larynx performs the vital function of airway protection during deglutition and also airway maintenance for respiration and phonation. The separation of these functions is critical and patients experiencing a loss of normal laryngeal function suffer greatly with symptoms of hoarseness, aspiration, stridor or vocal spasticity.

The treatment of patients with these symptoms secondary to vocal cord paralysis or neurogenic voice dysfunction has advanced in recent years with the development of several surgical methods of vocal rehabilitation. Because of these techniques most patients presently laryngeal cripples are candidates to regain laryngeal function.

## I. *Hoarseness and Aspiration-Unilateral Vocal Cord Paralysis*

Patients with unilateral vocal cord paralysis frequently have symptoms of hoarseness or a weak, breathy voice. They also may suffer from aspiration secondary to a loss of laryngeal adduction. In some instances, depending on the etiology of the paralysis, patients may compensate over a period of time and have little clinical impairment. These patients require no further treatment. In other cases, patients continue to have a poor voice or chronic aspiration and will benefit from surgical rehabilitation. Because of the possibility of a return of function or compensation in the acute period, no definitive surgical procedure to correct the vocal dysfunction should be undertaken for 6 to 12 months after the onset of the disorder.

Symptoms of hoarseness, a weak, breathy voice, weak cough, and aspiration of secretions in the patient with an uncompensated unilateral vocal cord paralysis may be corrected by moving the paralyzed vocal cord medially. Medialization decreases the glottic gap and improves voice strength and cough. Several methods are available to accomplish this task.

### *Teflon Injection*

The injection of medical grade Teflon paste into the paralyzed vocal cord increases the bulk of the cord and displaces it medially.[1] Teflon injection is a safe and time tested method and has the advantage of being performed endoscopically under topical anesthesia with immediate voice improvement. There is little morbidity. Most patients with chronic hoarseness or weak cough are candidates for this technique. A satisfactory voice and good cough are usually obtained although some patients may remain somewhat breathy and lack fine pitch control.

### *Surgical Medialization*

If the glottic gap is too great to be corrected by injection of Teflon paste the paralyzed vocal cord may be medialized surgically by placing a cartilage autograft in a pocket lateral to the paralyzed cord to create

---

ROBERT J. CARPENTER, III, M.D., Assistant Professor of Surgery; G. GORDON SNYDER, III, M.D., Associate Professor of Surgery; both of the Department of Surgery, Division of Otolaryngology and Facial Plastic Surgery, University of Connecticut Health Center, Farmington, CT.

bulk or by fixing the arytenoid cartilage in the midline.[2] These surgical techniques seldom are utilized, however, because Teflon injection provides good results in most instances without the necessity of a formal surgical procedure.

### II. *Stridor and a Good Voice-Bilateral Vocal Cord Paralysis*

In a bilateral vocal cord paralysis the vocal cords usually assume a paramedian position causing stridor and airway obstruction but maintaining of good voice. In some patients the airway may be sufficient at rest but any increase in oxygen demand will result in respiratory distress. Many patients require a tracheostomy as early management and never can be decannulated. With a valved tracheostomy tube the airway is secure and the voice is adequate, however, the tube requires constant care and limits activity. Most patients find the long term tracheostomy tube unsatisfactory and request a more permanent solution.

#### *Arytenoidectomy*

Surgical procedures to obviate the need for a tracheostomy in bilateral vocal cord paralysis lateralize a vocal cord to improve the glottic airway. Many procedures have been described to accomplish this goal, the most popular being arytenoidectomy.[2, 3] Arytenoidectomy requires general anesthesia and may be performed either transorally or transcervically. The arytenoid cartilage is removed from the posterior vocal cord on one side and the vocal cord sutured in a more lateral position. As the airway is improved the voice is sacrificed in proportion, however, and most patients must tolerate a breathy voice to gain an airway and lose their tracheostomy tube. The success rate of this technique is 70-80% and it has been the main modality for the treatment of bilateral vocal cord paralysis in the past.

#### *Vocal Cord Reinnervation*

The newest concept for rehabilitation of the paralyzed larynx is that of vocal cord reinnervation.[4, 5] This technique is most applicable in the patient with a bilateral vocal cord paralysis wishing to rid himself of his tracheostomy tube and restore a functional glottic airway. This procedure is not a static procedure as are the other methods described and provides for a return of close to normal vocal cord movement, abduction with respiration and adduction with speech. One method of reinnervation involves the isolation of a section of the omohyoid muscle at the arborization of the ansa hypoglossi nerve. This nerve-muscle pedicle is mobilized, and in a bilateral vocal cord paralysis (cord paralyzed in adduction) is sutured to the posterior cricoarytenoid muscle, the main laryngeal abductor. In a unilateral vocal cord paralysis (cord paralyzed in abduction) the pedicle is sutured into the bed of the lateral thyroarytenoid muscle, a strong laryngeal adductor. The omohyoid muscle pedicle can be used to restore both vocal cord opening and closing because being an accessory muscle of respiration it undergoes reflex firing both with respiration and phonation. This procedure has a 60-80% success rate for return of vocal cord movement in 1 to 4 months.

Compared to Teflon injection, nerve-muscle pedicle reinnervation is more likely to provide an acceptable voice for the patient with a unilateral vocal cord paralysis when the glottic gap is wide or if the patient depends on his voice for his livelihood. In most other instances Teflon injection is safe, simple, and provides an adequate voice. For the patient with a bilateral vocal cord paralysis, reinnervation is an excellent choice to provide a dynamic larynx for voice and airway control and obviate the need for a tracheostomy.

### III. *Vocal Spasticity-Spasmodic (Spastic) Dysphonia*

Spastic Dysphonia is a severe disorder of speech characterized by strained, strangled phonation. Patients with spastic dysphonia suffer severely because of the inability to communicate normally and are generally drawn into seclusion because of their handicap. It is one of several speech abnormalities of unknown etiology. The apparent neurophysiology is one of excessive involuntary adduction of the vocal cords during speech. Previous treatment for spastic dysphonia has included psychotherapy and speech therapy but there has been no documented case of a medical cure of the disease.

A surgical treatment for spastic dysphonia has been described which involves section of the recurrent laryngeal nerve.[6] As a result of this procedure the vocal cord assumes a paramedian position so that the remaining spastic vocal cord cannot exactly approximate it to cause the tight, spastic phonation characteristic of these people. This procedure was a breakthrough in the treatment of a previously disabling disease. Nerve section improves speech significantly and allows patients to return to normal daily activity. The morbidity of nerve section is slight except that the technique knowingly creates a unilateral vocal cord paralysis to treat a disease of unknown etiology. Recently a technique of selective section of only the adductor branch of the recurrent nerve has been described that obviates this problem.[7] It is more readily accepted by patients and referring physicians.

It is important to emphasize that any patient with this type of a speech disorder should be examined by an otolaryngologist and speech pathologist to rule out other speech abnormalities that do not respond to surgical treatment, such as essential voice tremor, and to allow a trial of speech therapy prior to surgical evaluation.

REFERENCES

1. Lewy RB: Glottic reformation with voice rehabilitation in vocal cord paralysis: The injection of Teflon and Tantalum. Laryngoscope, 73:547, 1963
2. Woodman G: A modification for the extralaryngeal approach to arytenoidectomy for bilateral abductor paralysis. Arch Oto, 43:63-65, 1946
3. Thornell W: Transoral intralaryngeal approach for arytenoidectomy in bilateral vocal cord paralysis with inadequate airway. Ann Otol, 66:364-368, 1957
4. Tucker HM: Human laryngeal reinnervation. Laryngoscope, 86:769-779, 1976
5. Tucker HM: Reinnervation of the unilaterally paralyzed larynx. Ann Otol, 86:789, 1977
6. Dedo HH: Recurrent nerve section for spastic dysphonia. Ann Otol, 85:451-459, 1976
7. Carpenter RJ III, Henley-Cohn JL, Snyder GG III: Spastic dysphonia: Treatment by selective section of the recurrent laryngeal nerve. Laryngoscope, 89:2000-2003, 1979

# Hyaline Membrane Disease in Twin B Following Prolonged Rupture of Membranes for Twin A

DAVID F. WENDER, M.D., CAROL KANDALL, M.D.,
PHYLLIS C. LEPPERT, M.D. AND RICHARD L. BERKOWITZ, M.D.

Elective induction of premature labor for prolonged rupture of membranes (PROM) has been advocated because of a decreased incidence in several studies of hyaline membrane disease (HMD) in infants born after PROM. In diamniotic twin gestation with PROM, obstetric management considerations are more complex since usually only the presenting twin has ruptured membranes. The second twin remains within an unruptured sac and may not benefit from the stimulus to accelerated fetal lung maturation which may result from ruptured membranes in the presenting twin. This report presents a case of premature diamniotic twins delivered electively after PROM. The perinatal courses of these twins differed only in the exposure of twin A to 25 hours PROM, yet twin B developed severe HMD while twin A was spared. This case suggests that when applied to twins, the practice of elective induction of premature labor for PROM may carry special risks and should merit special considerations.

## Case Report

A 27-year-old white, married, gravida 3, para 0, abortus 2, was transferred to Yale New Haven Hospital (YNHH) with PROM of 20 hours duration. Gestational age was estimated at 30 weeks by menstrual dates and 35 weeks by an ultrasound performed early in the third trimester which had also documented the presence of twins. Developmental landmarks and early sizing were not available. The patient had taken Elavil and an unknown thyroid medication during the first trimester of the current pregnancy. The thyroid medication was discontinued when she was demonstrated to be euthyroid. A glucose tolerance test was reportedly normal.

On admission, the patient was afebrile, BP 125/80. She was found to be pool, fern, and nitrazine positive by sterile speculum examination. Realtime ultrasound exam confirmed a twin gestation, with vertex/vertex presentations, and biparietal diameters of both twins which were concordant with a gestational age of 34 weeks. Labor was managed according to the protocol for singleton gestations then in effect at YNHH.[1] After 20 hours of PROM, induction of labor was begun using an oxytocin infusion. Both fetuses were electronically monitored throughout labor with no ominous fetal heart rate patterns being noted. A scalp electrode was applied to the scalp of the presenting twin at the time of the first vaginal examination, but all other monitoring was external. The patient was medicated 5 hours prior to delivery with Vistaril (75 mg) and Nisentil (30 mg). A peridural anesthetic was administered 2 hours prior to delivery with 9 cc Marcaine 0.5% and was reinforced at the time of delivery with 8 cc Nesacaine 2.0%

Approximately 5 hours after the establishment of active labor and after 25 hours PROM, twin A was delivered by elective low forceps. This infant was a 1350 gm male with Apgars of 8 and 8 at 1 and 5 minutes, respectively. Following the delivery of twin A, attempts were made to guide the second vertex into the pelvis by abdominal manipulation under direct realtime ultrasound visualization. When this failed, both feet of twin B were grasped vaginally, the second amniotic sac was ruptured and a complete breech extraction employing the Maruiceau-Smellie-Veit maneuver was performed without difficulty. The heart rate of twin B was visually monitored ultrasonically throughout the interim between deliveries. The second infant was a 1540 gm male with Apgar scores identical to those of twin A. Pathologic examination of the placentas revealed them to be of the diamniotic dichorionic type.

Dubowitz[2] estimation of twin A's maturity was consistent with a 32-week gestation. This infant had mild apnea and hypoxia during

---

DAVID F. WENDER, M.D., Associate Neonatologist, Maine Medical Center, Portland, ME. CAROL L. KANDALL, M.D., Associate in Obstetrics and Gynecology, Yale-New Haven Hospital. PHYLLIS C. LEPPERT, M.D., Associate in Clinical Obstetrics and Gynecology, Columbia University, New York, NY. RICHARD L. BERKOWITZ, M.D., Associate Professor of Obstetrics and Gynecology, Yale University School of Medicine.

Reprint requests to: Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510 (Dr. Berkowitz).

the first 24 hours of life which was treated with endotracheal continuous positive airway pressure (CPAP) utilizing an inspired oxygen concentration of less than 40%. The child was extubated early on the second day and did not require subsequent supplemental oxygen. An initial chest x-ray showed moderate retention of fetal lung fluid with good aeration and no evidence for HMD. When repeated on the second day the chest x-ray was entirely normal. The remainder of the hospital course was uncomplicated and the infant was discharged on the 55th hospital day.

Twin B was also felt to be 32 weeks gestation by Dubowitz estimate. He did very well in the delivery room; however, once in the nursery, he became dusky, and was noted to be grunting and retracting. He required intubation nearly simultaneously with twin A, but in contrast to the first twin, his lung compliance was poor, and his chest x-ray was characteristic of HMD. To stabilize twin B, 80% oxygen and positive pressure ventilation with positive and expiratory pressure were required. He remained on a ventilator for 4 days and after extubation continued to require supplemental oxygen for 12 days. His hospital course was further complicated by an intraventricular hemorrhage and resultant secondary hydrocephalus. A ventriculo-peritoneal shunt was performed on the 45th hospital day, and the child was discharged ten days later.

## Comment

In this case of twin gestation, elective induction of premature labor was undertaken with the assumption that the risk of HMD had been lowered by the presence of prolonged rupture of the membranes (PROM). Indeed, twin A was spared HMD when delivered after 25 hours of PROM. In twin B, however, membranes were not ruptured until immediately prior to delivery, and that twin went on to develop moderate to severe HMD.

The practice of elective induction of premature labor for PROM is based on several reports of an association between PROM and a decreased incidence of HMD.[1,3-6] For example, a study at YNHH revealed a significant reduction in the incidence and severity of HMD at 33 to 36 weeks gestation when singletons delivered after 16 hours of PROM were compared to those whose membranes were ruptured for less than 16 hours.[1] The association in these series between PROM and decreased risk of HMD may be the result of accelerated fetal lung maturation induced by PROM.

Though a decreased risk for HMD in the presence of PROM has been well documented, all such studies focus only upon the singleton gestation. In the diamniotic twin gestation, it is far from clear what effect PROM for the presenting twin has upon the co-twin in the unruptured sac. The small amount of information available would suggest that both twins may not be affected equally under these circumstances. Rajegowda et al[7] have reported two sets of twins for which twin A had 38 and 84 hours of PROM respectively. In both presenting twins, lecithin/sphingomyelin (L/S) ratios were increased as evidenced by positive gastric shake fluid tests. Neither of the second twins had PROM, each had a negative gastric shake test, and they both developed HMD and died. In another report on L/S ratios in twins, Weller[8] has documented higher pharyngeal L/S ratios in the first born of twins relative to the second but makes no comment on the influence of PROM.

An increased risk for HMD in the second born of twins has been documented in several reports and is generally assumed to relate to birth asphyxia sustained by the second twin after the delivery of the first twin.[9-11] We question this assumption because in this case, we are unable to define an insult sufficient to implicate birth asphyxia as an etiology for HMD in twin B. Only 14 minutes elapsed between deliveries of these twins, and during that interval, no fetal distress was detected in twin B under continuous monitoring of the fetal heart rate. The equality of the twins Apgar scores is further evidence against differential birth asphyxia affecting twin B. Unfortunately, cord pH's were not obtained. Past assumptions about the etiology of the increased risk of HMD for the second born of twins should be reassessed in light of the possibility that the risk of HMD in twin A may be decreased when only the presenting twin is affected by PROM.

In conclusion, since in premature diamniotic twins PROM of one sac may not stimulate lung maturation to the same degree in each twin, the practice of elective induction of labor after an arbitrary 16 or 24 hours PROM should be questioned. The presence of PROM in a twin pregnancy between 33 and 36 weeks should be an indication to tap the second, unruptured sac for assessment of the L/S ratio. If the L/S ratio of the second twin suggests pulmonary immaturity, alternatives to the immediate elective induction of labor should be considered.

## REFERENCES

1. Berkowitz RL, Kantor RD, Beck GJ, et al: The relationship between premature rupture of membranes and the respiratory distress syndrome. Am J Obstet Gynecol 131:503, 1978
2. Dubowitz LMS, Dubowitz V, Goldberg C: Clinical assessment of gestational age in the newborn infant. J Pediatr 77:1, 1970
3. Richardson CJ, Pomerance JJ, Cunningham MD, et al: Hyaline and ruptured - the membrane dilemma. Pediatr Res 7:178, 1973
4. Yoon JJ, Harper RG: Observations on the relationship between duration of rupture of the membranes and the development of idiopathic respiratory distress syndrome. Pediatrics 52:161, 1973
5. Chiswick ML, Burnard E: Respiratory distress syndrome. Lancet 1:1060, 1973
6. Bauer CR, Stern L, Colle E: Prolonged rupture of the membranes associated with a decreased incidence of respiratory distress syndrome. Pediatrics 53:7, 1974
7. Rajegowda RK, Freedman MD, Falciglia H, et al: Absence of respiratory distress syndrome (RDS) following premature rupture of membranes in one sib of a set of twins in two cases. Clin Res 23:600A, 1975
8. Weller PM, Jenkins PA, Gupta J, et al: Pharyngeal lecithin/sphingomyelin ratios in newborn infants. Lancet 1:12, 1976
9. Rokos J, Vaeusorn O, Nachman R, et al: Hyaline membrane disease in twins. Pediatrics 42:204, 1968
10. Nelligan G, Robson E, Hey E: Hyaline membrane disease in twins. Pediatrics 43:143, 1969
11. Verduzco R, Rosario R, Rigatto H: Hyaline membrane disease in twins. Am J Obstet Gynecol 125:668, 1976

# Therapeutic Plasmapheresis and Cytapheresis

## A Review

NEIL BLUMBERG, M.D. AND ALFRED J. KATZ, M.D.

**ABSTRACT—Therapeutic pheresis as an experimental clinical technique has grown enormously in recent years. However, its evaluation has largely been in diseases of unknown pathophysiology and etiology, and under uncontrolled circumstances. The role of therapeutic plasma- and cytapheresis is reviewed in the diseases or syndromes in which they have received trials. Replacement fluids during therapeutic plasmapheresis are discussed. Controlled studies are needed, and currently available data must be interpreted cautiously.**

### Introduction

Recent years have seen a veritable explosion in the use of therapeutic pheresis in the treatment of an evergrowing list of syndromes and diseases.[1-3] Publications appear almost daily with new data. We fully expect this review to be outdated as we write it. This activity is undoubtedly due to the refractory nature of many of these diseases to other therapy, and to the relatively recent increase in the availability of cell separators used to perform pheresis. The expansion in cell separator availability is due primarily to the demand for single donor platelet and granulocyte transfusion. The technology involved is simple and has been widespread for more than a decade.

In therapeutic plasmapheresis (also called plasma exchange) the patient's blood is extracted, centrifuged and the cellular components reinfused with accompanying crystalloid (normal saline or lactated Ringer's), colloid (albumin or plasma protein fraction) and/or homologous plasma. The patient's own plasma is discarded. In therapeutic cytapheresis the patient's blood is likewise extracted, centrifuged and the desired excess or abnormal component (lymphocytes, platelets, red cells or leukemic blasts) is removed or exchanged for homologous cells.

The rationale for therapeutic plasmapheresis is to remove presumably abnormal plasma components (e.g., immune-complexes, myeloma protein or autoantibodies) and/or normal mediators of inflammation (e.g., complement). The exchange fluid varies primarily with the patient's needs for replacement of coagulation factors and other proteins.[4-7] In many syndromes or diseases the "marker" protein or mediator, as well as the mechanism of the disorder is poorly understood or unknown. Thus the justification for an experimental trial of plasmapheresis in some situations is itself speculative.

The rationale for therapeutic cytapheresis is usually to reduce potentially dangerous high platelet (plateletpheresis) or leukemic blast (leukapheresis) counts. Therapeutic lymphapheresis is a possible alternative to thoracic duct drainage to remove lymphocyte mediators that may play a role in certain autoimmune disorders.

Almost all the proposed indications, methods and evaluations of efficacy discussed below are based on anecdotal case reports at worst and series of uncontrolled highly selected individual patients at best. While therapeutic pheresis appears to be a relatively safe procedure thus far, early reports of possible morbidity have appeared.[8] It is expensive and of unknown long-term benefit in almost all cases. The alleged short-term benefits summarized below need to be more fully evaluated in multicenter controlled trials before therapeutic pheresis can be considered a scientifically validated medical procedure.

### I. Therapeutic Plasmapheresis

There is only one clinical situation where plasmapheresis or partial plasma exchange is clearly the procedure of first choice. This is hyperviscosity syndrome associated with malignant gammopathy (e.g.,

---

NEIL BLUMBERG, M.D., Assistant Director, American Red Cross Blood Services, Connecticut Region; Assistant Professor of Laboratory Medicine, University of Connecticut School of Medicine. DR. BLUMBERG is presently Director, Blood Bank, Strong Memorial Hospital of The University of Rochester, Rochester, NY; ALFRED J. KATZ, M.D., Director, American Red Cross Blood Services, Connecticut Region; Associate Professor of Laboratory Medicine, University of Connecticut School of Medicine.

Waldenstrom's Macroglobulinemia, Multiple Myeloma). In certain disorders plasmapheresis has shown promise in patients who are refractory to other therapies.

In none of these cases are there prospective, controlled clinical trials and in none are the mechanisms of benefit, if any, known. The removal of antibody in neonatal isoimmune thrombocytopenia may accelerate recovery since the source of the antibody is exogenous.

### A. Some Diseases or Syndromes in Which Therapeutic Plasmapheresis has Received Clinical Trials

*Multiple Myeloma/Waldenstrom's Macroglobulinemia*[9-14]—Clinically evident hyperviscosity syndrome, rather than mere hyperproteinemia, is the indication. Plasmapheresis is accepted therapy in symptomatic patients (i.e., neurologic changes, retinopathy, vision or hearing impairments, bleeding), and is employed prophylactically in chronic treatment of patients refractory to chemotherapy or while awaiting its effects. Hyperviscosity syndrome rarely occurs at serum viscosities (37°C) of less than 4 - 5 (normal, relative to water, being 1.4 - 1.8). Normal viscosities are almost never achieved by plasmapheresis alone. Usually, acutely ill patients will respond after the initial one or two plasma exchanges. There is one report of successful treatment of myeloma kidney using plasmapheresis, dialysis and chemotherapy.[15]

*Myasthenia Gravis*[16-19]—Patients who fail to respond to prednisone, azathioprine and/or thymectomy and cholinesterase inhibitors have been reported to improve with plasmapheresis in conjunction with prednisone and azathioprine. It should be noted that the clinical improvements seen vary greatly from patient to patient. Six to ten exchanges may be required before clinical improvement is notable, but improvement usually begins after the first few procedures. Patients should receive an appropriate trial of medical therapy and still have major disability before plasmapheresis is considered. Titers of antibody to acetylcholine receptor are reported to be reduced in patients undergoing plasmapheresis, and increased during clinical relapses, which have occurred unpredictably. Patients undergoing plasmapheresis for myasthenia should be receiving concurrent immunosuppressive therapy.

*Thrombotic Thrombocytopenic Purpura*[20-25]—There is evidence that plasma infusion (10 - 12 units over 18 - 24 hours) may be efficacious in some patients.[24] In patients whose condition is rapidly worsening in terms of neurologic status and/or platelet count, or who are not improving after medical and/or surgical treatment, plasmapheresis should be given a trial. Daily or q.o.d. treatment for several plasma volumes has yielded clinical improvement rapidly (within days) in some cases. Replacement of volume with fresh frozen plasma, and, if necessary, platelet and red cell transfusion is probably appropriate because of coagulation factor consumption.

*Idiopathic Thrombocytopenic Purpura*[26] — Fulminant ITP with bleeding refractory to steroids and/or vincristine, and/or splenectomy has regressed concurrent with one total plasma exchange in two of three patients treated. Replacement fluid has been fresh frozen plasma.

*Warm Autoimmune Hemolytic Anemia*[27]—A handful of patients with fulminant hemolysis and inadequate response to steroids and/or splenectomy have had plasmapheresis prior to further red cell transfusion, with decreased antibody levels and red cell destruction rates post-pheresis. Patients with cold-type auto-immune hemolytic anemia are poor candidates for this procedure due to the current technical difficulty of safely keeping the extracorporeal blood at body temperature.

*Systemic Lupus Erythematosis*[28-31]—Patients with fulminant systemic lupus refractory to steroid therapy, and with evidence of circulating immune complexes have improved clinically and had rises in the level of C3 and C4 concurrent with a few weeks of 4 - 5 liter/week plasmaphereses. Patients without evidence of changes in serum complement level do not appear to benefit. Therapy is alleged to be most effective in those with some residual renal function.

*Goodpasture's Syndrome (and Crescentic Nephritis)*[32-39]—The use of plasmapheresis in conjunction with steroids and cytotoxic agents has been reported in a significant number of patients. This heterogenous group of severe nephritides are hypothesized to be due to circulating immune complexes (CIC) and/or antibodies directed against renal cells. Patients with rapidly deteriorating renal function and/or severe pulmonary hemorrhage have appeared to improve with several plasma exchanges per week for several weeks. Patients who are already anuric will probably not benefit from pheresis, at least as far as recovery of renal function is concerned. Pulmonary hemorrhage seems to respond well to this procedure. Plasmapheresis should probably be preceded by and concurrent with immunosuppressive therapy. Severe, intractable pulmonary hemorrhage is the prime indication, and, if present, replacement should be with fresh frozen plasma.

*Coagulation Factor Inhibitors*[40,41]—Plasma exchange is a feasible, but heroic method of temporarily raising factor VIII levels to permit surgery or treat acute life-threatening hemorrhage. Only a few cases have been reported. Replacement is with factor VIII concentrate and fresh frozen plasma (immunosuppressive therapy is given concomitantly). In the rare congenital coagulation factor deficiences for which concentrates are unavailable and bleeding is life-threatening, or high factor levels are needed for major surgery, plasma exchange with fresh frozen plasma may be a reasonable modality, especially when volume overload could be a problem due to coexistent cardiovascular or renal disease.

*Rh Disease (Hemolytic Disease of the Newborn)*[42-44] —In women who have had a previous pregnancy severely affected by HDN, and are determined by early amniocentesis (16 - 20 weeks) of the current pregnancy to have a similarly severely affected fetus, intensive plasmapheresis (2 - 7 liters several times/week) may enable fetal survival until intra-uterine transfusion or delivery is feasible. Anti-D levels may stabilize with treatment and amniotic fluid O.D. can be maintained at lower levels than in previous pregnancies. Development of a positive direct Coombs test (which is of uncertain etiology and significance) has been reported in intensively plasmapheresed mothers.[44] Some patients show rapid elevation of Anti-D in spite of or because of pheresis.

*Cryoglobulinemia*[45]—Patients with refractory renal or neurological compromise have benefitted from plasmapheresis. Cutaneous purpura fails to respond.

*Rheumatoid Arthritis*[46,47]—Patients who are incapacitated and refractory to therapies including penicillamine or gold have improved with a course of 20 plasmaphereses or lymphoplasmaphereses over three months, if maintained on drug therapy concomitantly. Relapses occur at several months, but may respond to further therapy.

*Hepatic Failure*[48-51]—Two patients with primary biliary cirrhosis complicated by incapacitating xanthomatous neuropathy unresponsive to diet and cholestyramine have had remission of xanthomata and neuropathy with plasmapheresis of several liters/week. A long-term benefit to plasmapheresis in acute hepatic failure has not been demonstrated. Patients with liver failure are probably poor risks for plasma exchange due to the need for anticoagulation.

*Malignancy*[52,53]—There is no clear-cut evidence as yet that plasmapheresis to reduce "blocking factors" to cell-mediated immunity can lead to significant clinical improvement.

*Other Disorders and Situations*—Many other trials of therapeutic pheresis have been reported, usually in one or two patients. The scarcity of information precludes statements as to possible benefit at this time in most cases.[54-63] Short term improvements in cutaneous T cell lymphoma,[64] Raynaud's Syndrome,[65,66] Refsum's disease,[67] and reduction in titer of antibody against ABO and HLA determinant prior to transplantation[68-71] have been reported, among others. Equivocal or negative results have been reported in amyotrophic lateral sclerosis[72] and exophthalmos with pretibial myxedema.[73,74]

### B. Replacement Fluids During Therapeutic Plasmapheresis

Replacement fluids will vary greatly with the disease state, the procedure, the patients's condition, the frequency (i.e., intensity) with which, and the length of time over which the plasmapheresis is conducted. Due to considerations of volume flux and equilibration the serum total protein should be adjusted with albumin or plasma protein fraction (or in special cases with fresh frozen plasma) if necessary so that the calculated final total protein is 5.5-6.0 grams/100 ml. Patients with hyperproteinemic states should be primarily replaced with saline or other crystalloid, as the purpose of the procedure is to lower serum protein levels. Some patients will have transiently prolonged prothrombin times and activated partial thromboplastin times if samples are drawn immediately after the procedure.[67] Most coagulation factors will not be dangerously lowered except by unusually intensive (3 times/week for more than one week) plasmapheresis or pre-existing liver disease or coagulopathy. Fresh frozen plasma is indicated for coagulation factor replacement but not for mere volume reconstitution or protein replacement unless these are concomitant with a coagulopathy.

## II. Therapeutic Cytapheresis

*Leukemia,*[75-81] *Thrombocythemia*[82-85] — Where increased cell counts and neurologic symptoms (leukostasis) or bleeding coexist, therapeutic pheresis may be used to lower counts acutely. There is little evidence at this time to suggest any benefit beyond the immediate but vital ameliorating of cerebral leukostasis in leukemia, or stopping bleeding in thrombocythemia. Extended attempts to maintain low counts of abnormal cells have been discouraging. Platelet counts greater than $10^6$/microliter and/or bleeding, and blast counts over 150,000/microliter and/or neurological symptoms are criteria for considering short-term therapeutic cytapheresis. While cytapheresis is not indicated when chemotherapy has failed, it may have an adjunct role in management of chronic lymphoproliferative disease.[80]

*Sickle Cell Disease*[86]—Red cell exchange (i.e., "exchange transfusion"), is sometimes desirable in refractory sickle cell crises and this can be performed by cell separator. However, routine manual methods are probably cheaper, as convenient, and less prone to technical difficulty secondary to sickling in the extracorporeal circuit.

## Discussion

We have attempted to summarize the current understanding of therapeutic pheresis as a treatment modality. In many, if not most instances, the technique is speculative and nonspecific in removing proposed mediators of disease. It is possible that physicians in the not-too-distant future will view these early efforts in about the same light as we now view the earlier uses of leeches, venesections and purgatives. We suspect many of these disorders will likely respond to future therapies more specifically directed at as yet unknown mechanisms and mediators. Some of these clinical situations will undoubtedly be shown to be no more responsive to therapeutic pheresis than to other nonspecific therapies currently in use or proposed. Those disorders benefitted by removal of specific plasma mediators of disease will likely be treated with more specific removal techniques (such as immunoabsorption) than whole plasma exchange.

By their very nature, the disorders under treatment are complicated and potentially heterogenous in many respects. When improvement is observed it is difficult to reliably assign cause to pheresis, changes in drug or other therapies occurring simultaneously, or spontaneous remissions that might occur in the absence of any therapy.

We hope these cautions will serve to highlight some of the promise therapeutic pheresis holds on the background of how little we conclusively know of its benefits at this time. Therapeutic pheresis should be considered a potentially useful tool of as yet unknown efficacy rather than a dramatic advance in medical therapy.

## REFERENCES

1. Jones JV: Plasmapheresis: Great economy in the use of horses. New Engl J Med, 297:1173-1174, 1977
2. Pinching AJ: Recent advances in immunological therapy: plasma-exchange and immunosuppression. Brit J Anaesth, 51:21-28, 1979
3. Isbister JP: Plasma exchange: A selective form of blood-letting. Med J Aust, 2:167-173, 1979
4. Buskard NA, Varghese Z, Wills MR: Correction of hypocalcaemic symptoms during plasma exchange. Lancet, 2:344-345, 1976
5. Keller AJ, Urbaniak SJ: Intensive plasma exchange on the cell separator: Effects on serum immunoglobulins and complement components. Brit J Haemat, 38:531-540, 1978
6. Keller AJ, Chirnside A, Urbaniak SJ: Coagulation abnormalities produced by plasma exchange on the cell separator with special reference to fibrinogen and platelet levels. Brit J Haemat, 42:593-603, 1979
7. Flaum MA, Cuneo RA, Appelbaum FR, Deisseroth AB, Engel WK, Gralnick HR: The hemostatic imbalance of plasma-exchange transfusion. Blood, 54:694-702, 1979
8. Sultan Y, Bussel AM, Naisonneuve P, Poupney M, Sitty X, Gajdos P: Potential danger of thrombosis after plasma exchange in the treatment of patients with immune disease. Transfusion, 19:588-592, 1979
9. Isbister JP, Biggs JC, Penny R: Experience with large volume plasmapheresis in malignant paraproteinaemia and immune disorders. Aust NAJ Med, 8:154-164, 1978
10. Russell JA, Toy JL, Powles RL: Plasma exchange in malignant paraproteinemia. Exp Hemat, 5:105-116, 1977
11. Feest TG, Burge PS, Cohen SL: Successful treatment of myeloma kidney by diuresis and plasmapheresis. Brit Med J, 1:503-504, 1976
12. Pineda AA, Brzica SM Jr, Taswell HF: Continuous- and semicontinuous-flow blood centrifugation systems: Therapeutic applications, with plasma-, platelet-, lympha-, and eosinapheresis. Transfusion, 17:407-416, 1977
13. Laningham JET: Partial plasma exchange, an adjunct in therapy to complex clinical problems. Transfusion, 17:547-554, 1977
14. Buskard NA, Galton DAG, Goldman JM, Kohner EM, Grindle CFJ, Newman DL, Twinn KW, Lowenthal RM: Plasma exchange in the long-term management of Waldenstrom's macroglobulinemia. CMA Journal, 117:135-137, 1977
15. Misiani R, Remuzzi G, Bertani T, Licini R, Levoni P, Crippa A, Mecca G: Plasmapheresis in the treatment of acute renal failure in multiple myeloma. Amer J Med, 66:684-688, 1979
16. Pinching AJ, Peters DK, Davis JN: Remission of myasthenia gravis following plasma-exchange. Lancet, 2:1373-1376, 1976
17. Dau PC, Lindstrom JM, Cassel CK, Denys EH, Shev EE, Spitler LE: Plasmapheresis and immunosuppressive drug therapy in myasthenia gravis. New Engl J Med, 297:1134-1140, 1977
18. Newsom-Davis J, Vincent A, Wilson SG, Ward CD: Long-term effects of repeated plasma exchange in myasthenia gravis. Lancet, 2:464-468, 1979
19. Dau PC (Editor): Plasmapheresis and the Immunobiology of Myasthenia Gravis. Boston, Houghton-Mifflin, 1979
20. Bukowski RM, King JW, Hewlett JS: Plasmapheresis in the treatment of thrombotic thrombocytopenic purpura. Blood, 50:413-417, 1977
21. Ansell JM, Beaser RS, Pechet L: Thrombotic thrombocytopenic purpura fails to respond to fresh frozen plasma infusion. Ann Int Med, 89:647-648, 1978
22. Okuno T, Kosova L: Plasmapheresis for thrombotic thrombocytopenic purpura (TTP). Transfusion, 19:342-344, 1979
23. Ryan PFJ, Cooper IA, Firkin BG: Plasmapheresis in the treatment of thrombotic thrombocytopenic purpura: a report of five cases. Med J Aust, 1:69-72, 1979
24. Byrnes JJ, Lian ECY: Recent therapeutic advances in thrombotic thrombocytopenic purpura. Sem Thromb Hemostasis, 5:199-215, 1979
25. Taft EG: Thrombotic thrombocytopenic purpura and dose of plasma exchange. Blood, 54:842-849, 1979
26. Branda RF, McCullough JJ, Tate DY, Jacob HS: Plasma exchange in the treatment of fulminant idiopathic (autoimmune) thrombocytopenic purpura. Lancet, 1:668-690, 1978
27. Branda RF, Moldow CF, McCullough JJ, Jacob HS: Plasma exchange in the treatment of immune disease. Transfusion, 15:570-576, 1975
28. Jones JV, Bucknall RC, Cumming RH, Asplin CM: Plasmapheresis in the management of acute systemic lupus erythematosus? Lancet, 1:709-711, 1976
29. Moran CJ, Parry HF, Mowbray J, Richards JDM, Goldstone AH: Plasmapheresis in systemic lupus erythematosus. Brit Med J, 1:1573-1574, 1977
30. Hubbard HC, Portnoy B: Systemic lupus erythematosus in pregnancy treated with plasmapheresis. Brit J Derm, 101:87-89, 1979
31. Lockwood CM, Rees AJ, Pussell B, Peters DK: Experience of the use of plasma exchange in the management of potentially fulminating glomerulonephritis and SLE. Exp Hemat, 5:117-136, 1977

32. Lang CH, Brown DC, Staley N, Johnson G, Ma KW, Border WA, Dalmasso AP: Goodpasture syndrome treated with immunosuppression and plasma exchange. Arch Intern Med, 137:1076-1078, 1977

33. Rossen RD, Hersh EM, Sharp JT, McCredie KB, Gyorkey F, Suki WN, Eknoyan G, Reisberg MA: Effect of plasma exchange on circulating immune complexes and antibody formation in patients treated with cyclophosphamide and prednisone. Amer J Med, 63:674-682, 1977

34. Johnson JP, Whitman W, Briggs, WA, Wilson CB, Plasmapheresis and immunosuppressive agents in antibasement membrane antibody-induced Goodpasture's syndrome. Amer J Med, 64:354-359, 1978

35. Lockwood CM, Worlledge S, Nicholas A, Cotton C, Peters DK: Reversal of impaired splenic function in patients with nephritis or vasculitis (or both) by plasma exchange. New Engl J Med, 300:524-525, 1979

36. Rosenblatt SG, Knight W, Bannayan GA, Wilson CB, Stein JH: Treatment of Goodpasture's syndrome with plasmapheresis. Amer J Med, 66:689-695, 1979

37. Bruns FJ, Stachura I, Adler S, Segel DP: Effect of early plasmapheresis and immunosuppressive therapy on natural history of anti-glomerular basement membrane glomerulonephritis. Arch Intern Med, 139:372-375, 1979

38. Munk AM, Skamene E: Goodpasture's syndrome—effects of plasmapheresis. Clin Exp Immunol, 36:244-249, 1979

39. Erickson SB, Kurtz SB, Donadio HV, Holley KE, Wilson CB, Pineda AA: Use of combined plasmapheresis and immunosuppression in the treatment of Goodpasture's syndrome. Mayo Clin Proc. 54:714-720, 1979

40. Pintado J, Taswell HF, Walter-Bowie EJ: Treatment of life-threatening hemorrhage due to acquired factor VIII inhibitor. Blood, 46:535-541, 1975.

41. Cobcroft R, Tamagnini G, Dormandy KM: Serial plasmapheresis in a haemophiliac with antibodies to FVIII. J Clin Path, 30:763-765, 1977

42. Clarke CA, Bradley J, Elson CJ, Donohoe WTA, Lehane D, Hughes-Jones NC: Intensive plasmapheresis as a therapeutic measure in rhesus-immunized women. Lancet, 1:793-798, 1970

43. Graham-Pole J, Barr W, Willoughby MLN: Continuous-flow plasma-pheresis in management of severe rhesus disease. Brit Med J, 1:1185-1188, 1977

44. Isbiter JP, Ting A, Seeto KM: Development of Rh-specific maternal autoantibodies following intensive plasmapheresis for Rh immunization during pregnancy. Vox Sang, 33:353-358, 1977

45. Brouet JC, Clauvel JP, Danon F, Klein M, Seligmann M: Biologic and clinical significance of cryoglobulins. Amer J Med, 57:775-788, 1974

46. Wallace DJ, Goldfinger D, Gatti R, Lowe C, Fan P, Bluestone R, Klineberg JR: Plasmapheresis and lymphoplasmapheresis in the management of rheumatoid arthritis. Arthritis and Rheumatism, 22:703-710, 1979

47. Goldman JA, Casey HL, McIlwain H, Kirby J, Wilson CH, Miller SB: Limited plasmapheresis in rheumatoid arthritis with vasculitis. Arthritis and Rheumatism, 22:1146-1150, 1979

48. Lepore MJ, Stutman LJ, Bonanno CA, Conklin EF, Robilotti JG Jr, McKenna PJ: Plasmapheresis with plasma exchange in hepatic coma. Arch Intern Med, 129:900-907, 1972

49. Haapanen E, Tiula E: Plasmapheresis with albumin as main substitute in acute hepatic coma. Scand J Gastroent, 7:75-83, 1972

50. Turnberg LA, Mahoney MP, Gleeson MH, Freeman CB, Gowenlock AH: Plasmapheresis and plasma exchange in the treatment of hyperlipaemia and xanthomatous neuropathy in patients with primary biliary cirrhosis. Gut, 13:976-981, 1972

51. Buckner CD, Clift RA, Volwiler W, Donohue DM, Burnell JM, Saunders FC, Thomas ED: Plasma exchange in patients with fulminant hepatic failure. Arch Intern Med, 132:487-492, 1973

52. Hersey P, Edwards A, Adams E, Isbister J, Murray E, Biggs J, Milton GM: Antibody-dependent, cell-mediated cytotoxicity against melanoma cells induced by plasmapheresis. Lancet, 1:825-827, 1976

53. Israel L, Edelstein R, Mannoni P, Radot E, Greenspan EM: Plasmapheresis in patients with disseminated cancer: clinical results and correlation with changes in serum protein. Cancer, 40:3146-3154, 1977

54. Ruocco V, Rossi A, Argenziano G, Astarita C, Alviggi L, Farzati B, Papaleo G: Pathogenicity of the intercellular antibodies of pemphigus and their periodic removal from the circulation by plasmapheresis. Brit J Derm, 98:237-241, 1978

55. Cotterill JA, Barker DJ, Millard LG: Plasma exchange in the treatment of pemphigus vulgaris. Brit J Derm, 98:243, 1978

56. Auerbach R, Bystryn JC: Plasmapheresis and immunosuppressive therapy. Arch Dermatol, 115:728-730, 1979

57. Holdstock GE, Fisher JA, Hamblin TJ, Loehry C: Plasma pheresis in Crohn's disease. Digestion, 19:197-201, 1979

58. Muggeo M, Flier JS, Abrams RA, Harrison LC, Deisserroth AB, Kahn CR: Treatment by plasma exchange of patient with autoantibodies to the insulin receptor. New Engl J Med, 300:477-480, 1979

59. Berger GMB, Miller JL, Bonnici F, Joffe HS, Dubovsky DW: Continuous flow plasma exchange in the treatment of homozygous familial hypercholesterolemia. Amer J Med, 65:243-251, 1978

60. Brettle RP, Gross M, Legg NJ, Lockwood M, Pallis C: Treatment of acute polyneuropathy by plasma exchange. Lancet, 2:1100, 1978

61. Server AC, Lefkowith J, Braine H, McKhann GM: Treatment of chronic relapsing inflammatory polyradiculoneuropathy by plasma exchange. Ann Neurology, 6:258-261, 1979

62. Fitchen JJ, Cline MJ, Saxon A, Golde DW: Serum inhibitors of hematopoiesis in a patient with aplastic anemia and systemic lupus erythematosus. Recovery after exchange plasmapheresis. Amer J Med, 66:537-542, 1979

63. Baudelot J, Esteves A, Leroux G, Baledent F, Lortholary P: Exchange plastmatique chez une malade ayant une maladie Behcet. Nouv Presse Med, 8:3563-3564, 1979

64. Edelson R, Facktor M, Andrews A, Lutzner M, Schein P: Successful management of the Sezary syndrome. New Engl J Med, 291:293-294, 1974

65. Talpos G, Horrocks M, White JM, Cotton LT: Plasmapheresis in Raynaud's disease. Lancet, 1:416-417, 1978

66. O'Reilly MJG, Talpos G, Roberts VC, White JM, Cotton LT: Controlled trial of plasma exchange in treatment of Raynaud's syndrome. Brit Med J, 1(6171):1113-1115, 1979

67. Gibberd FB, Billimoria JD, Page NGR, Retsas S: Heredopathia atactica polyneuritiformis (Refsum's disease) treated by diet and plasma-exchange. Lancet, 1:575-578, 1979

68. Berkman EM, Caplan S, Kim CS: ABO-incompatible bone marrow transplantation: preparation by plasma exchange and in vivo antibody absorption. Transfusion, 18:504-507, 1978

69. Cardella CJ, Sutton DMC, Falk JA, Katz A, Uldall PR, deVeber GA: Effect of intensive plasma exchange on renal transplant rejection and serum cytotoxic antibody. Trans Proc, 10:617-619, 1978

70. Rifle G, Chalopin JM, Turc JM, Guigner F, Vialtel P, Dechelette E, Chenais F, Cordonnier D: Plasmapheresis in the treatment of renal allograft rejections. Trans Proc, 11:20-26, 1979

71. Naik RB, Ashlin R, Wilson C, Smith DS, Lee HA, Slapak M: The role of plasmapheresis in renal transplantation. Clin Nephrol, 11:245-250, 1979

72. Monstad I, Dale I, Petlund CF, Sjaastad O: Plasma exchange in motor neuron disease. J Neurol, 221:59-66, 1979

73. Dandona P, Marshall NJ, Bidey SP, Nathan A, Havard CWH: Successful treatment of exophthalmos and pretibial myxoedema with plasmapheresis. Brit Med J, 1:374-376, 1979

74. Lewis RA, Slater N, Croft DN: Exophthalmos and pretibial myxoedema not responding to plasmapheresis. Brit Med J, 2:390-391, 1979

75. Lowenthal RM, Buskard NA, Goldman JM, Spiers ASD, Bergier N, Graubner M, Galton DAG: Intensive leukapheresis as initial therapy for chronic granulocytic leukemia. Blood, 46:835-844, 1975

76. Huestis DW, Price MJ, White RF, Inman M: Leukapheresis of patients with CGL using the Haemonetics blood processor. Transfusion, 16:255-260, 1976

77. Stirling ML, Parker AC, Keller AJ, Urbaniak SJ: Leukapheresis for papilloedema in CGL. Brit Med J, 2:676-677, 1977

78. Lowenthal RM: Chronic leukemias: treatment by leukapheresis. Exp Hemat, 5(Supplement):73-84, 1977

79. Eisenstaedt RS, Berkman EM: Rapid cytoreduction in acute leukemia. Transfusion 18:113-115, 1978

80. Cooper IA, Ding JC, Adams PB, Quinn MA, Brettel M: Intensive leukapheresis in the management of patients with CLL and lymphocytic lymphoma. Am J Hemat, 6:387-398, 1979

81. Carpentieri U, Patten EV, Chamberlin PA, Young AD, Hitter MD: Leukapheresis in a 3-year-old child with lymphoma in leukemic transformation. J Ped, 94:919-921, 1979

82. Greenberg BR, Watson-Williams EJ: Successful control of life-threatening thrombocytosis with a blood processor. Transfusion, 15:620-622, 1975

83. Younger J, Umlas J: Rapid reduction of platelet count in essential hemorrhagic thrombocythemia by discontinuous flow plateletpheresis. Amer J Med, 64:659-661, 1978

84. Goldfinger D, Thompson R, Lowe C, Kurz L, Belkin G: Long-term plateletpheresis in the management of primary thrombocytosis. Transfusion, 19:336-338, 1979

85 Taft EG, Babcock RB, Scharfman WB, Tartaglia AP: Plateletpheresis in the management of thrombocytosis. Blood, 50:927-933, 1977

86. Rifkind S, Waisman J, Thompson R, Goldfinger D: RBC exchange pheresis for priapism in sickle cell disease. J Am Med Assoc, 242:2317-2318, 1979

ELMCREST

A COMPREHENSIVE
MENTAL HEALTH TREATMENT CENTER
FOR ADULTS AND ADOLESCENTS

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Allen Cohen**, M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman**, M.D., F.A.P.A.
*Medical Director*
**M. Joan Green**, M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
☐ GERIATRIC GUIDANCE CENTER
☐ DAY HOSPITAL

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

# The Medical Malpractice Closed Claims Study

## Conducted by the National Association of Insurance Commissioners

## EXECUTIVE SUMMARY

By

M. PATRICIA SOWKA

**ABSTRACT—The NAIC "Closed Claims Study," just published in October, 1980, is a statistical analysis of over 71,000 malpractice insurance claims nationwide, the most extensive to date. The Executive Summary published here condenses 546 pages of data and findings into layman's language, documenting trends in the frequency and cost of such claims for various medical specialties, procedures, and injuries.**

**More importantly, these findings can point to priorities for action by hospital medical staffs and by individual physicians to prevent avoidable maloccurrences and their frequent consequences: patient injury, litigation, and heavy costs to all concerned. According to the study, the impact of such incidents on patients range from irksome to utterly tragic, and the impact on the involved physician from vindicatory to totally catastrophic. Measured in dollar indemnity, this impact is growing prodigiously, at a 30% annual rate.**

**Last month, the CSMS embarked upon the implementation phase of its new Patient Injury Prevention Program, in hopes of triggering innovative prevention activities through a network of Liaison Officers in each hospital and specialty section who will periodically receive "sterilized" clinical summaries of actual cases from the files of the Aetna, longtime insuror for most CSMS physicians. In addition to this NAIC study, CSMS program leaders will also have the benefit of a Connecticut Closed Claims Study, completed by the Aetna last month, along with an Open Claims Study to become available shortly.**

**Meanwhile, we express appreciation for NAIC's permission to publish this Executive Summary, originally prepared for the NAIC Executive Committee, and provided to the attendees of the November meeting of the Council of Medical Specialty Societies.**

**Robert J. Brunell, CSMS Staff**

In 1974-1975, various factors combined to precipitate an availability crisis in the medical malpractice insurance market. In June 1975, the NAIC adopted a new statistical program for medical malpractice and initiated the collection of comprehensive data on closed claims as a necessary first step in identifying and solving the elements of this problem. The NAIC data base includes information from the claim files of 128 insurers which had written medical malpractice premiums of $1,000,000 or more in any year since 1970, and consists of 71,782 claims closed between July 1975 and December 1978.

During the 3½ years covered by the study, indemnity* paid on medical malpractice claims by all insurers

---

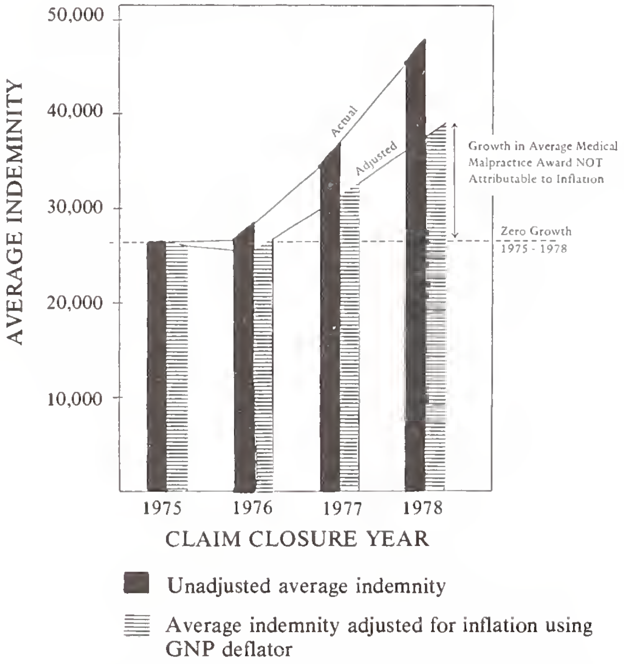
M. PATRICIA SOWKA is a Research Associate on the staff of the National Association of Insurance Commissioners (NAIC), which is a voluntary, unincorporated association of the 54 sovereign states and jurisdictions of the United States of America formed in 1871 to promote effective state regulation of the insurance business. Its function has been primarily to encourage uniformity in legislation affecting insurance, to collect statistical and other information regarding insurers and the business transacted by them, and to protect the interests of insurance policyholders. Mrs. Sowka was Project Director for the NAIC Closed Claims Study and Editor of the study report, NAIC Malpractice Claims. Copies of the complete 546-page NAIC study publication may be obtained for $200 each from the NAIC Executive Secretary's Office, 350 Bishops Way, Brookfield, Wisconsin 53005 (414/784-9540).

*Indemnity: total dollar losses paid by insurance companies under the terms of their policies.

reporting to the NAIC totalled $876 million, of which 39% was paid in 1978, the final study year. Between 1975 and 1978, the average award per injury increased 70% from $26,565 to $45,187, with inflation accounting for 28% of the increase (Exhibit 1). In each of the last two study years, average indemnity rose 30% over the previous year. If 1978 total medical malpractice losses are projected at this 30% growth rate, they approach $1 billion annually in only a few years.

EXHIBIT 1

INCREASE IN AVERAGE AWARD



A major factor contributing to the growth of indemnity was the increase in large settlements or judgments. Indemnity payments of $50,000 or more increased as a percentage of all reported incidents from 13% in 1975 to 20% in 1978. In 1975, only 5 awards of $1,000,000 or more were reported (1 per 1,000 paid claims); in 1978, 23 such awards were reported (3 per 1,000 paid claims).

The average defense cost and other allocated expense associated with each incident increased 73% over the study period and expense costs increased disproportionately on larger claims. The percentage of claims closed without any reported expense decreased.

Analysis by severity of injuries resulting in indemnity payments showed that temporary injuries accounted for 54% of all paid claims and 15% of total indemnity for all study years. Permanent injuries accounted for 26% of all claims and 57% of indemnity, and deaths accounted for 16% of claims and 27% of indemnity. The number of claims and dollars paid for emotional injuries and solely legal issues were relatively insignificant.

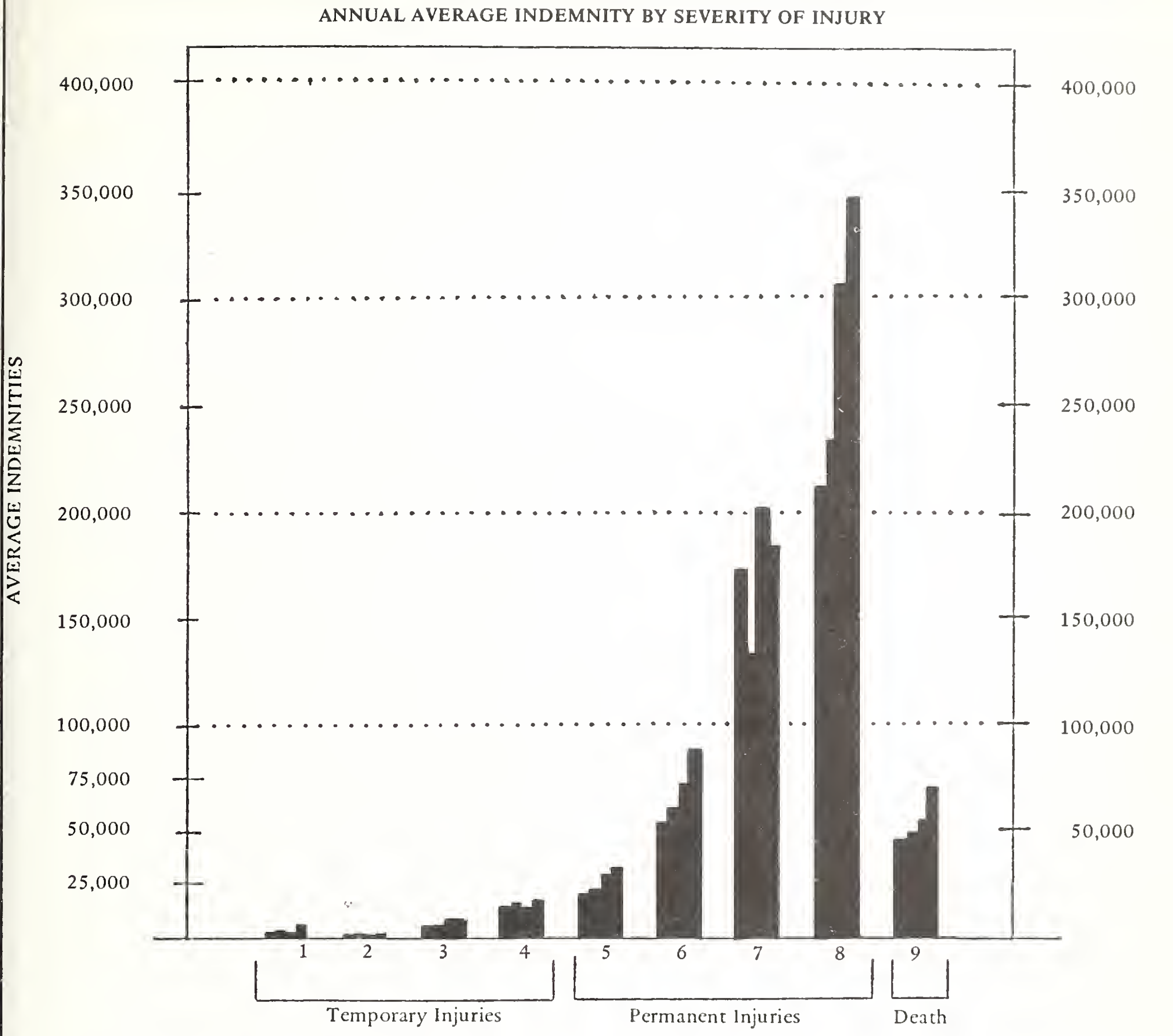
Permanent injuries, particularly grave injuries—those involving cardiac arrest, quadraplegia or severe brain damage and often resulting from anesthesia accidents, patient monitoring problems or birth injuries—showed the greatest increase in average indemnities between 1975 and 1978. The average indemnity paid for grave injuries increased from $213,777 in 1975 to $349,203 in 1978, a rise of 63% (Exhibit 2). Although grave injuries represented only 2% of all injuries resulting in claim payments in 1975 and 3% in 1978, claims for these injuries accounted for 16% of total indemnity in 1975 and 22% of total indemnity in 1978. Injuries to infants comprised 17% of all cases where indemnity was paid for grave injuries in 1975 and 32% in 1978. Injuries to infants also accounted for 13% of all cases where indemnity was paid for permanent major injuries (the second most severe injury category) in 1975 and 25% in 1978. In this same period, temporary injuries decreased as percentages of yearly incident and indemnity totals.

Hospitals were reported as the site of injury in 78% of all incidents which resulted in paid claims. However, when classified by type of defendant, 60% of all paid claims involved doctors and 31% hospitals. This indicates that many claims arose from the activities of physicians in hospitals. Indemnity payments for physician defendants amounted to 71% of total reported indemnity, while payments for hospital defendants amounted to 25%. Payments arising from incidents involving other health care professionals and institutions accounted for only 4% of total indemnity. Average indemnity paid for hospital defendants rose 59% between 1976 and 1977, but decreased 5% between 1977 and 1978, while average indemnity paid for physician defendants increased 37% from 1977 to 1978 (Exhibit 3).

The claim reports presented many variations in the medical circumstances surrounding the injuries for which indemnity was sought. However, when the core data was summarized, it showed that 35% of all reported paid claims related to allegations of improperly performed procedures, 27% were associated with diagnostic errors, 10% with drug injuries, 10% with falls, and 15% with other events or combinations of causes. Only 3% of claims originated from anesthesia injuries, but these injuries were associated with 11% of all indemnity (Exhibit 4).

The general categories of procedures most often reported as associated with malpractice claims, and accounting collectively for almost one-half of all incidents and indemnity, were 1) Examinations, including emergency room examinations and other medical examinations, 2) Operations on the female genital system, in particular hysterectomies, tubal ligations, and D&C's, 3) Treatments with drugs, 4) Diagnostic and therapeutic procedures, which include physical therapy, cast immobilizations and blood transfusions, and

EXHIBIT 2



| | Severity of Injury Scale | Examples |
|---|---|---|
| Temporary | 1) Emotional only | Fright, no physical damage. |
| | 2) Insignificant | Lacerations, contusions, minor scars, rash. No delay. |
| | 3) Minor | Infections, missed fracture, fall in hospital. Recovery delayed. |
| | 4) Major | Burns, surgical material left, drug side effect, brain damage. Recovery delayed. |
| Permanent | 5) Minor | Loss of fingers, loss or damage to organs. Includes nondisabling injuries. |
| | 6) Significant | Deafness, loss of limb, loss of eye, loss of one kidney or lung. |
| | 7) Major | Paraplegia, blindness, loss of two limbs, brain damage. |
| | 8) Grave | Quadraplegia, severe brain damage, lifelong care or fatal prognosis. |
| | 9) Death | |

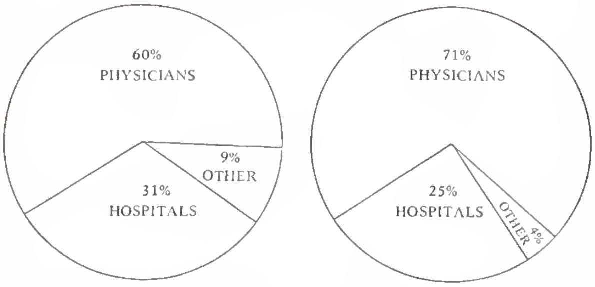
Each block on this graph represents an injury category defined on the claim reporting form. Within each block, the four steps represent average indemnities for each claim closure year, 1975 through 1978.

5) Operations on the musculoskeletal system, in particular reductions of fractures and excisions of intervertebral discs. In Exhibit 5, specific procedures (as contrasted with general categories of procedures) are ranked by association with paid claims.

By procedure group, the highest average indemnity payments arose from anesthesia procedures ($96,822) in particular general anesthesia ($100,573). Although anesthesia-related claims accounted for only 3% of all paid incidents by count, they accounted for 11% of total indemnity payments, and average indemnity on these cases increased 58% from 1977 to 1978. Approximately one-half of the 640 cardiac arrests reported in connection with paid claims were related to anesthesia. Cardiac arrests accounted for one-third of all anesthesia-related injuries.

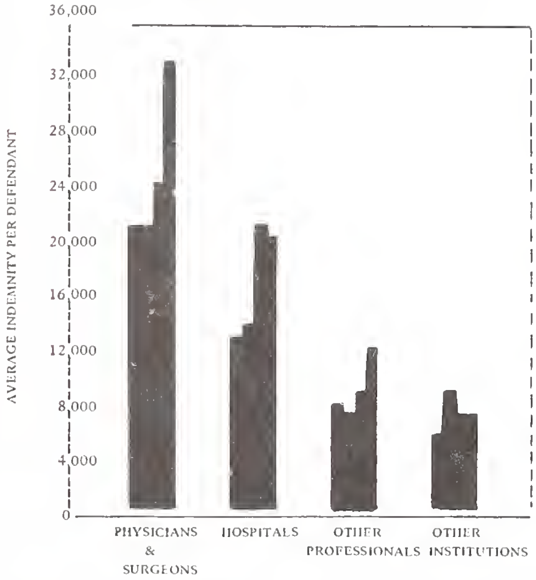
EXHIBIT 3

**DISTRIBUTION OF CLAIMS BY DEFENDANT FOR ALL YEARS**



PERCENT OF TOTAL PAID CLAIMS PERCENT OF TOTAL INDEMNITY

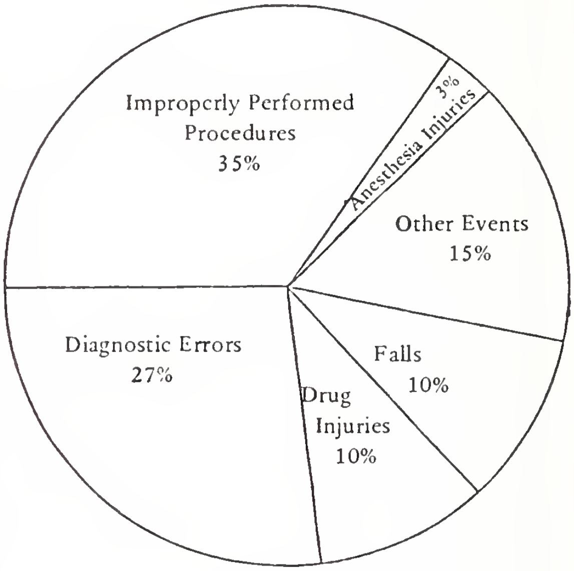
**INDEMNITY BY DEFENDANT**



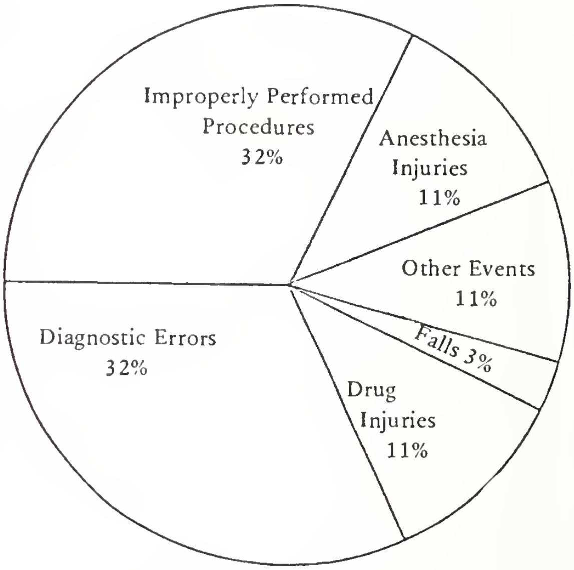
The graph above illustrates changes in average indemnity for each type of defendant over the 3½ years studied. The 4 steps within each block on the graph represent average indemnities for each claim closure year.

EXHIBIT 4

**DISTRIBUTION OF CLAIMS FOR ALL YEARS BY ALLEGATION**



PERCENT OF TOTAL PAID CLAIMS



PERCENT OF TOTAL INDEMNITY

EXHIBIT 5

## MOST FREQUENTLY REPORTED PROCEDURES

| | Most Frequently Reported Procedures | HICDA Code Range | Incidents Total | Incidents Paid | Average Indemnity | Average Severity of Injury |
|---|---|---|---|---|---|---|
| 1 | Treatment with Drugs | D60.0-D79.9 | 5687 | 2786 | 36,827 | 5.0 |
| 2 | Physical Examination | Y00.0-Y00.6, Y00.8-Y01.9 | 3386 | 1397 | 43,616 | 5.7 |
| 3. | Emergency Room Examinations | Y00.7 | 2394 | 1002 | 32,333 | 5.5 |
| 4. | Other X-Ray Procedures | R99.0 | 2062 | 971 | 19,703 | 4.2 |
| 5 | Incision, Excision and Suture of Skin, Including Skin Grafts | 88.0, 88.3-88.7, 88.9, 89.0 89.2-89.3, 90.2 | 2040 | 964 | 13,127 | 3.7 |
| 6 | Hysterectomy, Abdominal (Total and Subtotal) and Vaginal | 68.2-68.4 | 2055 | 960 | 36,036 | 4.7 |
| 7 | Closed and Open Reductions of Fractures and Dislocations With or Without Fixation Device, Excluding Facial Fractures | 79.0-79.8 | 2166 | 828 | 37,773 | 4.5 |
| 8 | Operations on Teeth and Supporting Structures | 23.0-23.9, 24.0-24.9 | 1480 | 794 | 7,555 | 3.3 |
| 9 | Inhalation and Intravenous Anesthesia Procedures | A168.0-A168.9, A268.0-A268.9 | 1281 | 716 | 100,573 | 5.7 |
| 10 | Sterilizations—Male and Female | 63.5, 63.6, 66.3, 66.4 | 1381 | 647 | 14,954 | 3.1 |
| 11 | Dilation and Currettage and Aspiration Currettage of Uterus | 69.0, 69.1 | 1168 | 564 | 26,870 | 4.0 |
| 12 | All Types of Monitoring | H93.0-H93.2, H93.6-H93.9 | 1030 | 478 | 101,347 | 6.9 |
| 13 | Excision of Intervertebral Disc | 80.5 | 929 | 400 | 72,921 | 5.4 |
| 14 | Obstetrical Procedures Excluding Caesarean Sections | 72.0-72.8, 73.0-73.9, 75.0-75.9 | 866 | 380 | 69,755 | 4.9 |
| 15 | Physical Therapy and Rehabilitation | 97.6, 97.7 | 717 | 358 | 11,940 | 3.7 |
| 16 | Operations on the Biliary Tract Including Exploratory Laparotomy | 51.0-51.9 | 690 | 347 | 61,716 | 5.0 |
| 17 | Incision, Excision of Abdominal Wall and Peritoneum Including Exploratory Laparotomy | 54.0-54.4 | 708 | 300 | 38,889 | 5.2 |
| 18 | All types of Herniorrhaphy | 53.0-53.9 | 671 | 257 | 33,003 | 4.8 |
| 19 | Appendectomy | 47.0 | 605 | 244 | 54,379 | 5.4 |
| 20 | All types of Caesarean Sections | 74.0-74.9 | 525 | 236 | 76,343 | 5.8 |
| 21 | Operations on Tonsils and Adenoids | 28.0-28.9 | 338 | 190 | 35,102 | 5.1 |
| 22 | Insertion of Intra-uterine Device | 69.2 | 444 | 177 | 21,191 | 3.6 |

Operations on the nervous system resulted in the second most costly claims ($72,336). Within this group, operations on the spinal cord were most frequently reported and most costly, with an average indemnity of almost $105,000. Average indemnity paid for injuries from operations on the nervous system increased 168% between 1975 and 1978.

Obstetrical procedures produced the third highest average indemnity by category ($72,279). Claims reporting low forceps deliveries, though not frequent, usually involved brain-damaged infants, and the resulting indemnities averaged in excess of $100,000. Average indemnity on obstetrical procedures as a category increased 47% between 1977 and 1978.

Operations on the cardiovascular and respiratory systems, and special hospital procedures also resulted in costly claims. Monitoring procedures, included in the latter group, resulted in claims with an average indemnity of $101,000.

By specialty, as classified for insurance purposes, the Physician Minor Surgery class accounted for the most paid claims and largest percentage of indemnity paid for physician defendants followed by Physician No Surgery, General Surgery, Surgery Ob/Gyn, Orthopedic Surgery, Anesthesiology, General Practice with Surgery, and Neurosurgery. Collectively, these groups accounted for 83% of all indemnity paid for claims against physicians. In terms of average claim size, Neurosurgeons and Anesthesiologists had the most expensive claims, $56,065 and $44,208 (Exhibit 6).

Over the study period, analysis of time elements in the claims process showed an increasing time taken to settle or dispose of claims, (Exhibit 7). Claims closed with payment in 1975 involved incidents which had occurred, on average, 37 months earlier. Claims closed with payment in 1978 involved incidents which had occurred 46 months earlier. Claims closed without payment in 1978 averaged 38 months to reach closure status, an increase of 12 months over 1975. Since this study was terminated in December 1978, and the incidents for which claims were closed in 1978 had occurred, on the average, in 1974-1975 (38-46 months earlier), it is difficult to measure the effect of the legislation passed in 1975 to shorten statutes of limitations.

## EXHIBIT 7

### TIME ELEMENTS IN CLAIMS

| Closure Year | Incident to Report | Report to Disposition | Total Months to Disposition |
|---|---|---|---|
| | PAID CLAIMS | | |
| 1975 | 14 | 23 | 37 |
| 1978 | 17 | 29 | 46 |
| | CLAIMS WITH NO PAYMENT | | |
| 1975 | 12 | 14 | 26 |
| 1978 | 17 | 21 | 38 |

This chart summarizes the average months between an incident, the reporting of a claim and disposition of that claim, for claim closures reported in 1975 and 1978.

## EXHIBIT 6

### EXPERIENCE BY PHYSICIAN SPECIALTY

| ISO Classification | Specialty | Percent of Total Physicians Indemnity | Average Indemnity | Number of Claims |
|---|---|---|---|---|
| 80112 | PHYSICIAN, MINOR SURGERY | 16 | $21,527 | 3234 |
| 80111 | PHYSICIAN, NO SURGERY | 13 | 21,206 | 2501 |
| 80143 | GENERAL SURGERY | 13 | 25,449 | 2245 |
| 80153 | SURGERY OB/GYN | 13 | 27,429 | 2011 |
| 80154 | ORTHOPEDIC SURGERY | 9 | 20,526 | 1343 |
| 80151 | ANESTHESIOLOGY | 9 | 44,208 | 839 |
| 80113 | GENERAL PRACTICE WITH SURGERY | 5 | 18,103 | 1141 |
| 80152 | NEUROSURGERY | 5 | 56,065 | 347 |

Claim dispositions reported as resulting from court actions also increased over the course of this study. In 1975, only 7% of all medical malpractice claims were disposed of in courts of law. That percentage increased each year through 1978 when 18% of all claims were resolved by litigation. In addition, almost half of all reported settlements were reached after a suit had been filed or a trial was underway. The percentage of claims against physicians resolved by the court process was higher than the percentage of claims against hospitals. The success of the defendant in court also increased over the course of the study. Defendants won 8 of each 10 court cases reported in 1975 and 9 of each 10 reported in 1978. The lengthened claim disposition times, as noted in the paragraph above, made it difficult to evaluate the impact of legislation (which established review panels in many states during 1975) on the number of cases directed to the courts.

*****

## Specific Procedure Analyses

**The following analyses of specific procedures were produced from the NAIC data, at the request of the Council of Medical Specialty Societies. The analyses enumerate specific injuries associated with representative particular procedures of the various specialties.**

### Orthopaedic Surgeons
### Pediatrics

*Analysis for 79.0 - Closed Reduction Without Internal Fixation With Application of Cast*

Total Cases - 451

| *Injuries* | *Cases* |
|---|---|
| 1. Late Effect of Fractures (Malunion, Nonunion) | 247 |
| 2. Acquired Musculoskeletal Deformities | 86 |
| 3. Impairment of Neuromusculoskeletal Function | 70 |
| 4. Misdiagnosis | 56 |
| 5. Gangrene | 28 |
| 6. Below-knee Amputations | 22 |
| 7. Scars | 19 |
| 8. Above-knee Amputations | 15 |
| 9. Volkmann's Ischemic Contractures | 14 |
| 10. Nerve Injuries | 14 |
| 11. Osteomyelitis | 12 |
| 12. Amputations Other Than Leg | 11 |
| 13. Anesthetic Injuries | 11 |
| 14. Post-traumatic Wound Infection | 9 |
| 15. Peripheral Neuropathy - Any Nerve | 8 |
| 16. Post-operative Wound Infections | 8 |
| 17. Artery Injuries | 8 |
| 18. Osteoporosis and Bone Atrophy | 5 |
| 19. Decubitus Ulcers | 5 |
| 20. Accidental Fall During Hospital Stay | 5 |

*Other injuries with 1 or 2 occurrences:*

Venous (Peripheral) Insufficiency, Aseptic Necrosis of Bone, Phlebitis and Thrombophlebitis, Bacterial Diseases, Motor Neuron Disease, Embolisms, Contractures and Deformities, Injury of Tendons, Resulting Dislocation, Ankylosis of Joint, Shock, Acute Arthritis, Post-operative Hemorrhage, Musculoskeletal Injuries of Knee and Leg, Hepatitis, Internal Derangement of Joint, Pulmonary Complications, Abnormal Vascular Signs, Limitation of Motion, Difficulty in Walking, Pain in Limb, Synovitis of Joint, Paresthesia, Open Wounds.

### Psychiatry

*Analysis for D70.0, D70.1 and D70.9 - Administration of Psychotropic Drugs*

Total Cases - 204

| *Injuries* | *Cases* |
|---|---|
| 1. Adverse Effect, Unspecified | 72 |
| 2. Adverse Effect, Overdose | 44 |
| 3. Adverse Effect, Improper Route of Administration | 32 |
| 4. Adverse Effect, Allergic Reaction | 25 |
| 5. Nerve Injuries | 18 |
| 6. Misdiagnosis | 16 |
| 7. Adverse Drug, Wrong Drug Chosen by Physician | 14 |
| 8. Adverse Effect, Adverse Interaction with Other Drug | 11 |
| 9. Cardiac Arrest | 9 |
| 10. Brain Damage | 8 |
| 11. Superficial Injuries to Skin and Subcutaneous Tissue | 8 |
| 12. Thrombophlebitis | 8 |
| 13. Adverse Effect, Improper Route of Administration | 7 |
| 14. Suicide | 7 |
| 15. Accidental Falls | 7 |
| 16. Acquired Musculoskeletal Deformities | 7 |
| 17. Diseases of Liver | 5 |

*Other injuries with 1, 2, or 3 occurrences:*

Drug Given to Wrong Patient, Prescription Error, CVA with Paralysis, Paranoid States, Dependence on Tranquilizers, Myocardial Infarction, Scars, Embolism, Rash, Paralysis, Hemorrhage, Aspiration Pneumonia, Disturbance of Speech, Bradycardia, Respiratory Arrest, Encephalitis, Kidney Failure, Peripheral Neuropathy, Subdural Hemorrhage, Hypotension, Fractures After Falls, Prenatal Complications, Artery Injuries, Congestion of Lung, Indigestion, Cellulitis, Disturbance of Skin Sensation, Tetanus, Disturbance of Coordination, Coma.

## Surgery

*Analysis for 51.1 - Cholecystectomy*

Total Cases - 327

| *Injuries* | *Cases* |
|---|---|
| 1. Foreign Body Left in Operative Wound | 92 |
| 2. Puncture or Laceration of Intra-abdominal Organs | 59 |
| 3. Misdiagnosis | 53 |
| 4. Post-operative Wound Infection | 24 |
| 5. Anesthetic Injuries | 18 |
| 6. Post-operative Hemorrhage or Hematomas | 18 |
| 7. Peritonitis or Adhesions | 17 |
| 8. Other Types of Infection Such as Bacteremia and Septicemia | 16 |
| 9. Nerve Injuries | 15 |
| 10. Post-operative Fistulas | 12 |
| 11. Disruption of Operative Wound | 8 |
| 12. Burns | 8 |
| 13. Obstruction of Bile Duct | 8 |
| 14. Complications for Nonabsorbable Surgical Material | 8 |
| 15. Artery Injuries | 6 |
| 16. Renal Failure | 6 |
| 17. Embolism | 6 |
| 18. Shock | 5 |
| 19. Postcholecystectomy Syndrome | 5 |
| 20. Pulmonary Collapse and Other Lung Complications | 5 |
| 21. Jaundice | 5 |
| 22. Puncture or Laceration of GI Organs | 4 |
| 23. Puncture or Laceration of Other Organs | 4 |
| 24. Puncture or Laceration of Pelvic Organs | 3 |
| 25. Transfusion Reactions | 3 |
| 26. Serum Hepatitis | 3 |
| 27. Ventral Hernia | 3 |

*Other Injuries with 1 or 2 occurrences:*

Complications of Internal Anastomosis, Acute Cholangitis, Gangrene, Hepatic Failure, Necrosis of Liver, Scars, Congestive Heart Failure, Gangrene of Intestines, Congestion of Kidney, Intestinal Obstruction, Fever of Unknown Origin, Upper Respiratory Tract Infections, Abscess of Trunk and Upper Arm, Fracture of Rib, Myocardial Infarction, Colostomy Status, Malaise and Fatigue, Anemia, Hiatal Hernia, and Tracheostomy Status.

## Allergy

*Analysis for Y82.0 - Desensitization to Allergies*

Total Cases - 11

| *Injuries* | *Cases* |
|---|---|
| 1. Anaphylactic Shock | 6 |
| 2. Patients Expiring | 5 |
| 1 Cardiac Arrest | |
| 1 Allergic Reaction to Medication and Shock | |
| 1 Other Serum Reaction | |
| 1 Anaphylactic Shock | |
| 1 Unknown | |
| 3. Other Serum Reaction | 3 |

## Otolaryngology
## Plastic and Reconstructive Surgery

*Analysis for 21.8 - Repair and Plastic Operations on Nose*

Total Cases - 89

| Injuries | Cases |
|---|---|
| 1. Abscess, Necrosis, Ulcer (Septum) of Nose | 26 |
| 2. Cicatrix or Scar | 15 |
| 3. Deviated Nasal Septum | 12 |
| 4. Superficial Injury of Face, Neck or Scalp | 8 |
| 5. Post-operative Wound Infection | 6 |
| 6. Acquired Musculoskeletal Deformity of Nose | 5 |
| 7. Misdiagnosis (Diabetes Complication, Malignant Neoplasm of Nose) | 4 |
| 8, Other Dermatosis | 4 |
| 9. Foreign Body Left in Operative Wound | 4 |
| 10. Post-operative Hemorrhage | 3 |
| 11. Dyspnea | 3 |

*Other injuries with 1 or 2 occurrences:*

Other Hypertrophic and Atrophic Conditions of Skin, Disturbances of Skin Sensations, Fracture of Nasal Bones, Neurosis and Adjustment Reactions, Vertigo.

## Internal Medicine

*Analysis for 94.7 - Blood Transfusions*

Total Cases - 218

| *Injuries* | *Cases* |
|---|---|
| 1. Serum Hepatitis | 129 |
| 2. Transfusion Reaction (Incompatibility) | 82 |
| 3. Infection or Sepsis Due to Transfusion | 25 |
| 4. Misdiagnosis | 13 |
| 5. Acute or Chronic Kidney Failure | 10 |
| 6. Brain Damage | 4 |
| 7. Mental Retardation | 4 |
| 8. Cardiac Arrest | 4 |
| 9. Shock | 4 |
| 10. Hemorrhage | 4 |
| 11. Pulmonary Emboli | 3 |
| 12. Congestive Heart Failure | 3 |
| 13. Complications from Intravenous Catheter Device | 3 |
| 14. RH Iso-immunization | 3 |

*Other injuries with 1 or 2 occurrences:*

Artery Injuries, Disseminated Intravascular Coagulopathy, Gastroenteritis, Anemia, Other Renal Disease, Nerve Injuries, Disturbances of Skin Sensation, Asphyxia, Superficial Injuries to Skin, Toxic Hepatitis, Dyspnea, Injury to Blood Vessel of Abdomen, Partial Deafness of Infant, Mother with Kidney Failure Having Stillbirth, Muscle Cramps, Congestion of Lung, Anesthesia Injuries, Disorders of Heart Rhythm, Cerebrovascular Accidents, Amputation Arm Above Elbow, Infants Having RH Iso-immunization, Impairment of Neuromusculoskeletal Function of Upper Arm, Fever of Unknown Origin, Hypovolemic Shock, Convulsions, and Rash.

## Obstetrics and Gynecology
## Family Practice

### *Analysis for 68.2 and 68.3 - Total and Subtotal Abdominal Hysterectomy*

Total Cases - 746

| *Injuries* | *Cases* |
|---|---|
| 1. Puncture or Laceration of Pelvic Organs | 163 |
| 2. Post-operative Fistulas | 129 |
| 3. Foreign Body Left in Operative Wound | 90 |
| 4. Misdiagnosis | 71 |
| 5. Post-operative Wound Infections | 55 |
| 6. Anesthetic Injuries | 54 |
| 7. Peritonitis | 37 |
| 8. Puncture or Laceration of GI Tract | 37 |
| 9. Complications from Nonabsorbable Surgical Material | 32 |
| 10. Nerve Injuries | 31 |
| 11. Post-operative Hemorrhage or Hematomas | 26 |
| 12. Gastrointestinal Disturbances | 25 |
| 13. Bacterial Disease | 19 |
| 14. Obstruction of Ureter | 15 |
| 15. Absence of Other Organs as Result of Complications | 15 |
| 16. Artery Injuries | 14 |
| 17. Undesired Sterility | 13 |
| 18. Disruption of Operative Wound | 11 |
| 19. Pulmonary Embolism | 11 |
| 20. Shock | 10 |
| 21. Burns | 10 |
| 22. Urinary Incontinence | 9 |
| 23. Pelvic Inflammatory Disease | 8 |
| 24. Kidney Failure | 6 |
| 25. Congestive Heart Failure | 6 |
| 26. Pneumonia | 5 |
| 27. Thrombophlebitis | 5 |
| 28. End-result Colostomy | 5 |

*Other injuries with 1 or 2 occurrences:*

Gangrene, Paralysis, End-result Amputation, Embolism in Extremities, Renal Disease, Urinary Tract Infection, Cystitis, Stricture of Urethra, Disease of Liver, Tracheostomy with Partial Absence of Colon, Injury to Kidney, Acute Pulmonary Edema and Hypostatic Pneumonia.

## Emergency Medicine
## Dermatology

### *Analysis for 89.0 - Suture of Skin and Subcutaneous Tissue*

Total Cases - 400

| *Injuries* | *Cases* |
|---|---|
| 1. Misdiagnosis of Complicated (Foreign Body or Primary Infection) Open Wound | 122 |
| 2. Late Effect of an Open Wound | 99 |
| 3. Impairment of Neuromusculoskeletal Function | 66 |
| 4. Misdiagnosis of a Muscle or Tendon Injury | 53 |
| 5. Foreign Body Granuloma of Skin | 52 |
| 6. Late Effect of a Muscle or Tendon Injury | 35 |
| 7. Post-operative Wound Infection | 30 |
| 8. Post-traumatic Wound Infection | 26 |
| 9. Scars | 23 |
| 10. Complicated Open Wound - Present After Surgery | 22 |
| 11. Misdiagnosis of Open Wound | 19 |
| 12. Nerve Injuries | 16 |
| 13. Peripheral Neuropathy | 14 |
| 14. Misdiagnosis of Fracture | 12 |
| 15. Gangrene | 12 |
| 16. Misdiagnosis, Other Than Above | 11 |
| 17. Amputation of Finger | 9 |
| 18. Acquired Musculoskeletal Deformities | 7 |
| 19. Amputations of Leg | 6 |
| 20. Gas Gangrene | 5 |
| 21. Keloid Scars | 5 |
| 22. Pain in Limb | 4 |
| 23. Cellulitis and Abscess | 4 |

*Other injuries with 1, 2, or 3 occurrences:*

Misdiagnosis of Open Intracranial Wound, Brain Damage, Post-operative Fistula, Amputation of Both Legs, Amputation of Arm, Ankylosis of Joints, Infective Myositis, Amputation of Thumb, Tetanus, Lacerations of Tendon, Anesthetic Injuries, Laceration of Nerve, Late Effect of Nerve Injuries, Late Effect of Fractures, Contracture of Tendon, Superficial Injuries, Muscle Cramp, Disturbance of Sensation, Osteomyelitis, Artery Injuries, Local Infections of Skin, Thrombophlebitis, Synovitis or Bursitis, and Accidental Falls.

## Colon and Rectal Surgery

### *Analysis for 45.5 - Subtotal Resection of Large Intestine*

Total Cases - 59

| *Injuries* | *Cases* |
|---|---|
| 1. Foreign Body Left in Operative Wound | 22 |
| 2. Post-operative Fistula | 12 |
| 3. Misdiagnosis | 11 |
| 4. Puncture or Laceration of Gastrointestinal Tract | 8 |
| 5. Peritonitis | 6 |
| 6. Post-operative Wound Infection | 4 |
| 7. Colostomy Status | 4 |
| 8. Renal Failure | 3 |
| 9. Complications of Internal Anastomosis | 3 |
| 10. Anesthetic Injuries | 3 |

*Other injuries with 1 or 2 occurrences:*

Spontaneous Pneumothorax, Post-operative Shock, Pulmonary Emboli, Septicemia, Intestinal Obstruction, Gangrene of Intestine, Obstruction of Ureter, Other Renal Disease, Ileostomy Status, Disruption of Operative Wound, Ventral Hernias, Nerve Injuries, Serum Hepatitis, Pelvic Inflammatory Disease, Injury to Kidney, Metastases Developed, Fall During Hospital Stay Causing Fracture of Facial Bones. Dyspareunia, Gastrointestinal Bleeding, Adverse Effects of Drugs.

## Neurology

### *Analysis for 98.0 - Encephalography and Ventriculography*

Total Cases - 5

*Injuries*

1. Infant delivered vaginally apparently should have had a Cesarean Section. The infant was born with brain damage and hydrocephalus.
2. The encephalography was misinterpreted so a malignant neoplasm was misdiagnosed.
3. The encephalography was misinterpreted so an intracranial injury was misdiagnosed resulting in unspecified blindness.
4. The patient has an abnormal encephalography and the patient had hemiplegia.
5. Patient developed a disease of the optic nerve.

## Neurological Surgery

### *Analysis for 80.5 - Excision of Intervertebral Disc*

Total Cases - 400

| *Injuries* | *Cases* |
|---|---|
| 1. Post-laminectomy Syndrome | 51 |
| 2. Accidental Puncture or Laceration | 49 |
| 3. Foreign Body Left in Operative Site | 49 |
| 4. Misdiagnosis | 48 |
| 5. Nerve Injuries | 47 |
| 6. Need for Further or Repeat Surgery | 34 |
| 7. Acquired Musculoskeletal Deformities | 31 |
| 8. Impairment of Neuromusculoskeletal Function | 26 |
| 9. Post-operative Wound Infection | 25 |
| 10. Anesthetic Injuries | 24 |
| 11. Artery Injuries | 23 |
| 12. Spinal Cord Lesion without Evidence of Vertebral Injury | 19 |
| 13. Quadriplegia | 17 |
| 14. Muscoloskeletal Injuries of Back | 17 |
| 15. Paraplegia | 16 |
| 16. Meningitis | 15 |
| 17. Diseases of Spinal and Peripheral Nerves | 12 |
| 18. Bacterial Infections | 12 |
| 19. Other and Unspecified Paralysis | 9 |
| 20. Postoperative Hemorrhage or Hematoma | 8 |
| 21. Burns | 7 |
| 22. Impotence | 7 |
| 23. Hemiplegia | 6 |
| 24. Gas Embolism | 6 |
| 25. Contusions | 5 |
| 26. Post-operative Fistulas | 5 |
| 27. Urinary Incontinence | 5 |
| 28. Monoplegia | 5 |

*Injuries with 4 or less occurrences:*

Injury to Gastrointestinal Tract, Complications of Other Grafting Procedures, Dislocation, Instability of Joint, Dysuria, Pulmonary Emboli, Shock, Fracture of Vertebral Column, Injury to Intrathoracic Organ, Intraspinal Abscess, Incontinence of Feces, Cicatrix or Scar, Injury to Pelvic Organs, Osteomyelitis, Thrombophlebitis, Spontaneous Pneumonothorax, Complications from Nonabsorbable Materials, Disturbances of Skin Sensation, Neurogenic Bladder Dysfunction, Cystitis, Continuing Back Pain, and Accidental Falls During Hospital Stay.

## Ophthalmology

### *Analysis for 15.4 - Intracapsular Extraction of Lens*

Total Cases - 90

| *Injuries* | *Cases* |
|---|---|
| 1. Blindness, One Eye, Not Specifically Defined | 36 |
| 2. Blindness, One Eye, Specifically Defined | 19 |
| 3. Post-operative Wound Infection | 16 |
| 4. Absence of Eye | 9 |
| 5. Post-operative Hemorrhage | 7 |
| 6. Contusion of Eye or Orbit | 6 |
| 7. Detachment of Retina | 5 |
| 8. Misdiagnosis (Benign Neoplasm of Eye, Glaucomas) | 5 |
| 9. Blindness, Unspecified | 3 |
| 10. Disturbance of Vision, Not Elsewhere Classified | 3 |
| 11. Accidental Puncture or Laceration | 3 |
| 12. Anesthetic Injuries | 3 |
| 13. Open Wound of Eye or Orbit | 3 |

*Other injuries with 1 or 2 occurrences:*

Other and Unspecified Inflammation of Uveal Tract, Vascular Lesions of Retina, Other Inflammatory Diseases of Eye, Infections and Bacterial Disease, Burns, Need To Do Further Surgery, Other Diseases of Iris, Foreign Body in Eye or Adnexa, Keratitis, Secondary Membrane or Sommering's Ring, Vesicles or Bullae, Adverse Effect of Other Electrolytic, Caloric and Water Balance Agents, Overdose of Anticoagulants, Malfunction of a Prosthetic Device, Uveitis (Sympathetic), Adverse Effect from Antibiotic Diseases of Eyelid, Blurred Vision and Conjunctivitis.

## Anesthesiology

### *Analysis for A168.1 - Inhalation of Anesthetic Gas*

Total Cases - 541

| *Injuries* | *Cases* |
|---|---|
| 1. Cardiac Arrest & Brain Damage | 200 |
| 2. Broken Teeth | 200 |
| 3. Injury to Intrathoracic Organs (Excluding Heart & Lung) | 25 |

| | |
|---|---|
| 4. Toxic Hepatitis | 25 |
| 5. Superficial Injuries of Skin | 11 |
| 6. Aspiration Pneumonia with Foreign Body in Bronchus or Lung | 10 |
| 7. Asphyxia | 9 |
| 8. Postoperative Wound Infection | 8 |
| 9. Myocardial Infarction | 8 |
| 10. Respiratory Arrest | 7 |
| 11. Serum Hepatitis | 6 |
| 12. Cerebral Paralysis | 6 |
| 13. Nerve Injuries | 5 |
| 14. Other Diseases of Lung | 5 |
| 15. Kidney Failure | 5 |

*Other injuries with less than 4 occurrences:*

Foreign Body in Pharynx and Larynx, Scars or Cicatrix, Spontaneous Pneumothorax, Injury to GI Organ, CVA with Paralysis, Cerebral Palsy, Mental Retardation, etc., after Mother's C-Sections, Injury of Lung, Fever of Unknown Origin, Blindness, Hepatic Failure, Burns, Abscess of Lung, Comas, Hemorrhage, Pulmonary Emboli & Shock.

## Urology

*Analysis for 60.2 - Prostectomy, Transurethral*

Total Cases - 94

| *Injuries* | *Cases* |
|---|---|
| 1. Puncture or Laceration of Pelvic Organs | 23 |
| 2. Burns | 15 |
| 3. Urinary Incontinence | 13 |
| 4. Misdiagnosis | 6 |
| 5. Anesthetic Injuries | 6 |
| 6. Foreign Body Left in Operative Site | 5 |
| 7. Other Symptoms of Male Genital Organs | 4 |
| 8. Impotence | 4 |
| 9. Puncture or Laceration of GI Tract | 3 |
| 10. Sterility | 3 |
| 11. Post-operative Hemorrhage | 3 |
| 12. Neuroses | 3 |

*Other injuries with 1 or 2 occurrences:*

Renal Failure, Bacteremia, Peritonitis, Enuresis, Misdiagnosis of a Cardiac Condition, Surgery Lead to MI, Colostomy Status, Fistulas, Other Diseases of Male Genital Organs, Abnormal Posture, Post-operative Wound Infection, Orchitis and Epididymitis, Nerve Injuries, Erythema Multiforme, Retention of Urine, Stricture of Urethra, Serum Hepatitis, Urinary Tract Infection, Hematuria, Misdiagnosis of Circulatory Disease After Surgery Lead to Amputation of Leg, Above Knee, Unspecified Mental Disorder Associated with Drug and Chemicals, Gangrene Led to Amputation of Leg, Above Knee, Complications of Nonabsorbable Surgical Material, Fall During Hospital Stay, and Other Diseases of Urethra.

## Thoracic Surgery

*Analysis for 31.1 - Temporary Tracheostomy*

Total Cases - 52

| *Injuries* | *Cases* |
|---|---|
| 1. Respiratory Arrest | 12 |
| 2. Misdiagnosis | 12 |
| 3. Cardiac Arrest | 11 |
| 4. Stomal Complication | 4 |
| 5. Brain Damage | 4 |
| 6. Respiratory Insufficiency | 3 |
| 7. Artery Injuries | 3 |
| 8. Post-operative Hemorrhage | 3 |
| 9. Puncture or Laceration of Intrathoracic Organs | 3 |
| 10. Cicatrix or Scars | 3 |

*Other injuries with 1 or 2 occurrences:*

Cerebral Palsy, Hemiplegia, Post-operative Fistula, Influenza, Edema or Larynx, Asphyxia, Pulmonary Collapse, Enterostomy Complication, Anesthetic Injuries, Bradycardia, Burns, Disorders of Voice, Adverse Effect of Sympathomimetics, Congestive Heart Failure, Other Diseases of Larynx, Injury to Spleen, Asphyxiation and Strangulation, Stammering, Stuttering and Other Speech Disturbances, Musculoskeletal Injury of Ribs and Sternum, and Diseases of Bronchus and Trachea.

## Radiology
## Nuclear Medicine

*Analysis for 97.0 and 97.1 - Beam Radiation Therapy and Radium or Radioisotope Therapy*

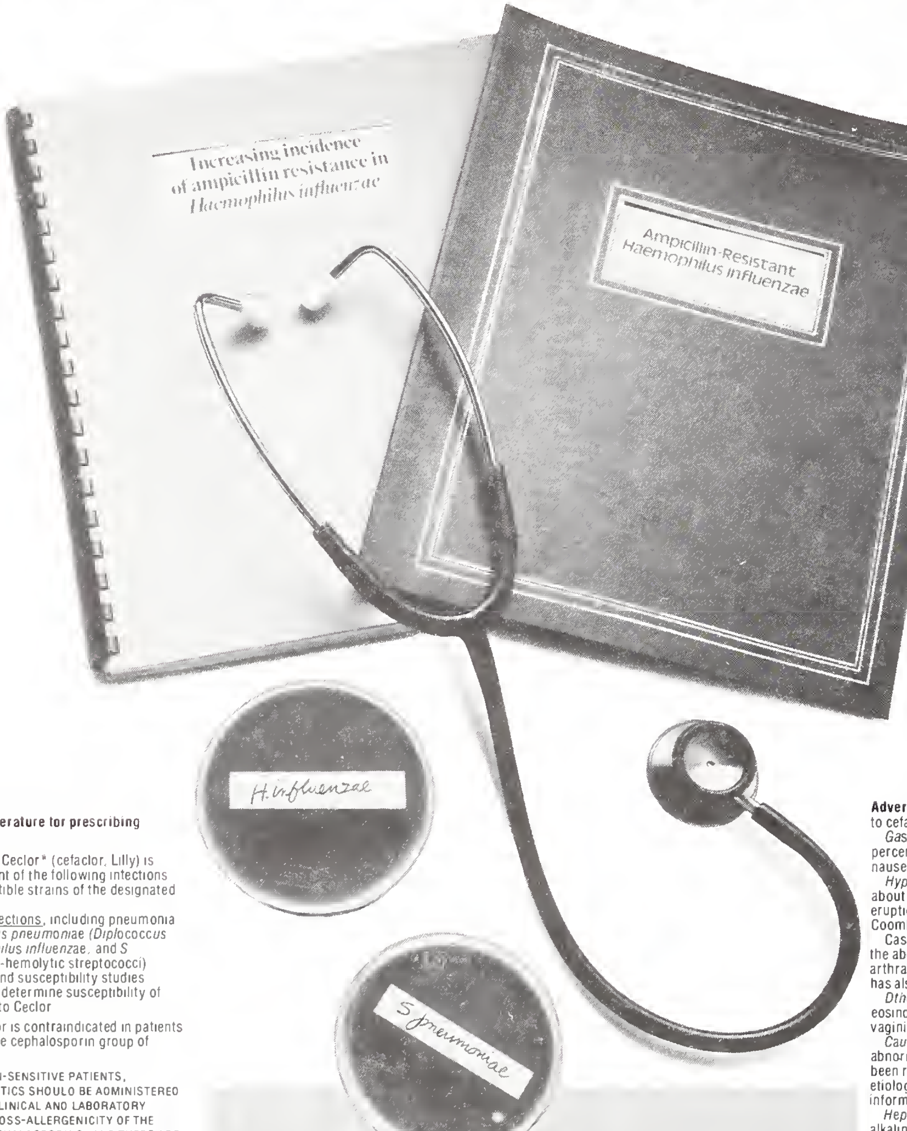
Total Cases - 115

| *Injuries* | *Cases* |
|---|---|
| 1. Adverse Effects of External Radiation | 91 |
| 2. Burns | 33 |
| 3. Adverse Effect of Internal Radiotherapy | 12 |
| 4. Sterility | 9 |
| 5. Misdiagnosis | 8 |
| 6. Paralysis | 7 |
| 7. Accidental Falls | 7 |
| 8. Carcinoma of Thyroid | 5 |
| 9. Myelitis | 4 |
| 10. Gangrene | 4 |
| 11. Resulting Fractures from Falls | 4 |

*Other injuries with 1, 2, or 3 occurrences:*

Colostomy Status, Artificial Opening of Urinary Tract, Impairment of Hearing, Injury of GI Tract, Rectovaginal Fistula, Abdominal Pain, Blindness, Tracheostomy Status, Osteomyelitis, Chronic Fibrosis of Lung, Toxic Nephropathy, Pelvic Inflammatory Disease, Infective and Parasitic Disease, Decubitus Ulcer, Pneumonia, Prenatal Complications, Disease of Esophagus, Disturbance of Speech, Hemoptysis, Encephalomalacia, Impotence, Syncope, Atrophy of Testicle, Urinary Incontinence, Injury to Pelvic Organs, Gastroenteritis, Proctitis, Foreign Body Left at Radiation Site, Keloid Scar, Disruption of Ossicular Chain, Musculoskeletal Deformities, Nerve Injuries, Eczema Due to Radiation, Scars.

# An added complication... in the treatment of bacterial bronchitis*


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

**Brief Summary.**
**Consult the package literature for prescribing information.**

**Indications and Usage**: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae*, and *S pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

**Contraindication**: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

**Warnings**: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE)

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

**Precautions**: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g , pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

*Usage in Pregnancy*—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus

*Usage in Infancy*—Safety of this product for use in infants less than one month of age has not been established

**Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

**Ceclor®**
**cefaclor**

Pulvules®, 250 and 500 mg

**Adverse Reactions**: Adverse effects considered related to cefaclor therapy are uncommon and are listed below:

*Gastrointestinal* symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90)

*Hypersensitivity* reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients

Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported Anaphylaxis has also been reported

*Other* effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

*Causal Relationship Uncertain*—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

*Hepatic*—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

*Hematopoietic*—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

*Renal*—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [103080R]

---

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.[8]

*Note*: Ceclor® (cefaclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information

**References**
1 Antimicrob Agents Chemother., *8*:91, 1975.
2 Antimicrob. Agents Chemother., *11*:470, 1977.
3. Antimicrob Agents Chemother., *13*:584, 1978.
4 Antimicrob Agents Chemother., *12*:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), II, 880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., *13*:861, 1978.
7 Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R G. Douglas, Jr., and J.E. Bennett), p. 487. New York: John Wiley & Sons, 1979.

Lilly

*Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.*

**Eli Lilly Industries, Inc.**
Carolina, Puerto Rico 00630

100061

# Caring for the Whole Patient: Health Advocacy

JOAN H. MARKS, M.S.

Health care expenditures in the United States are anticipated to exceed $250 billion before long, but many patients feel they have not been well served and some feel the care received is not sufficiently humane. At the same time, health care providers feel they are overextended in providing care, sometimes for the very people who criticize them as uncaring. Is there any way to address this basic conflict between providers and consumers?

One obvious way that seems to be effective is to open the lines of communication between patients and their health care providers. The Secretary's Commission on Medical Malpractice[1] concluded that "Poor communication between physician and patient" was the single most common cause of malpractice suits. An atmosphere of more open communication could be achieved if a designated person or persons were available in health care institutions with this objective in mind. Such people are variously called health advocates, patient representatives or ombudsmen. Sarah Lawrence College, a liberal arts college in Bronxville, New York, has developed the nation's first masters program to train such individuals. This Health Advocacy Program has accepted its first class for September 1980. The program is an interdisciplinary one of 18 months' duration including nearly 1,000 hours of field work training in various health care settings. The curriculum includes courses covering various aspects of health care and human biology and a cluster of courses specific to advocacy concepts. A Master of Arts or a Master of Professional Studies degree will be awarded.

The concept of patient advocacy was not new to me as Director of Sarah Lawrence's Human Genetics Program, which was also the first program in the country to train genetic counselors.[2] In supervising the clinical work of these students, I realized that we were training our students to become advocates for families with genetic disease, usually a crisis situation which renders many families too traumatized to deal adequately with their problems. In exploring the ramifications of this role, I became aware of the hospital patient representative who assists patients in negotiating the health system by counselling them as to their rights and responsibilities and who serves as liaison between patients and hospital staff. Certain groups such as the aged, children, minorities and foreign speaking populations are particularly disadvantaged in hospitals and can derive great benefit from an individual assigned to help them maneuver the system.

### The Patient as Consumer

Patients tend these days to see themselves as active participants in their health care. The Patient's Bill of Rights (Figure 1) was promoted by the American Hospital Association in 1973 to outline what patients could legitimately expect to receive from hospital care. This Bill of Rights also helps to clarify the responsibilities patients assume as they seek health care. For the first time, there is a written document stating that patients are entitled to know about their health care, to be informed and to have the right to ask questions of health professionals and to expect answers. The patient representative or health advocate plays a key role in helping patients and providers understand their responsibilities and their legitimate expectations. In this process they are often able to recognize problem areas and to take the time to investigate the root causes of the problem from all sides in order to alter the existing system to everyone's benefit. A system which functions better clearly achieves better delivery of primary care.

### How Can a Patient Representative Solve Patient Care Problems?

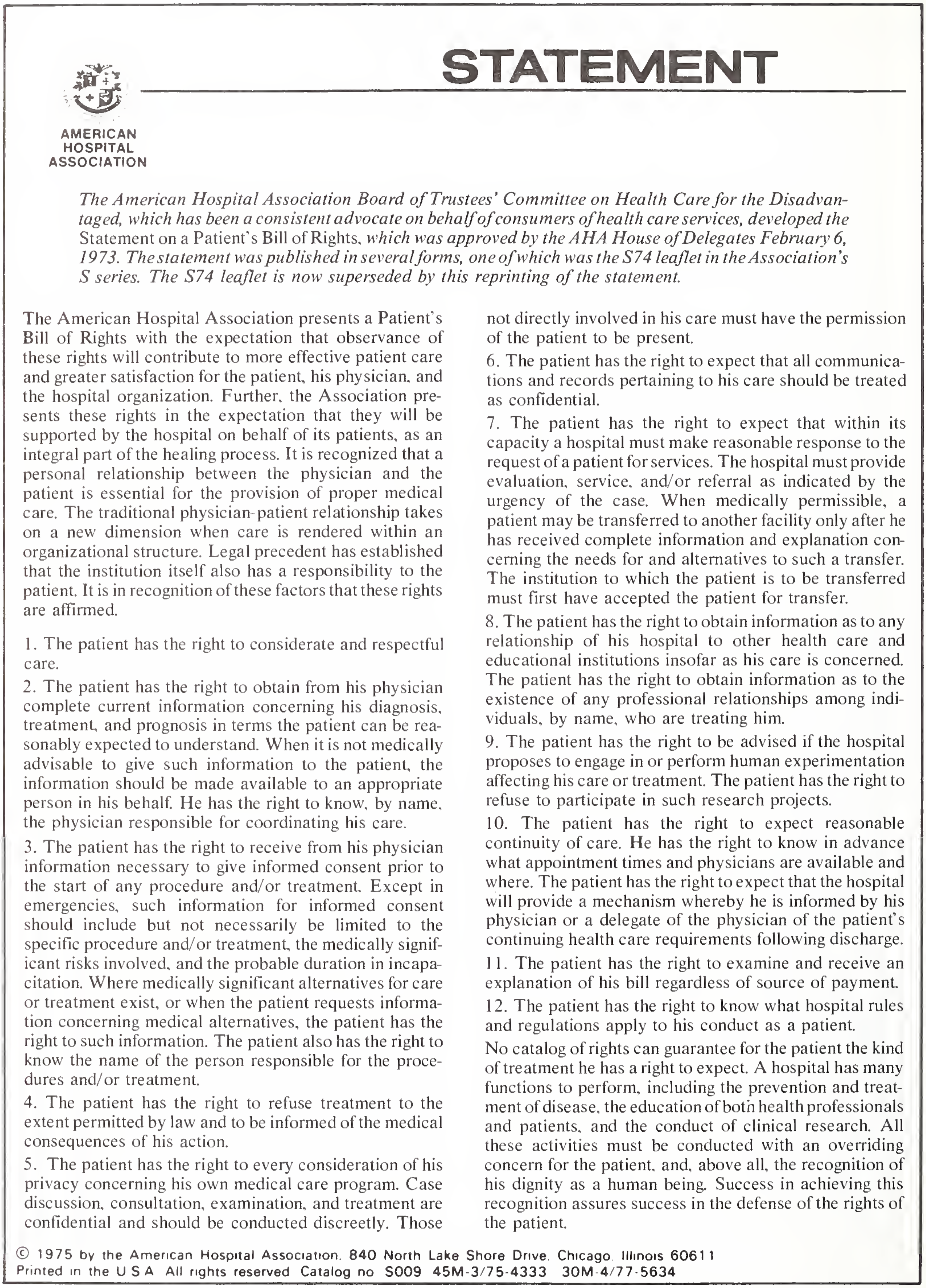
It is a common situation for patients to fail to follow doctor's orders upon discharge. This can be a major problem when discovered at the time of the patient's first return visit. The majority of patients intend to help themselves and follow the doctor's orders. So what goes wrong? Health advocates who have investigated this single problem have learned several things, all under the category of inadequate communication. The doctor *thought* he explained the procedures to be followed upon discharge; the patient doesn't recall being told anything about his after-care! If the patient does remember the discussion, he or she might not have the prescribed medication or know where to get it. He

---

JOAN H. MARKS, M.S., Co-Director, Health Advocacy Program, Sarah Lawrence College, Bronxville, NY.

*This Program is supported in part by the Florence V. Burden, the J.M., and the Helena Rubinstein Foundations.*

Figure 1



# STATEMENT

**AMERICAN HOSPITAL ASSOCIATION**

*The American Hospital Association Board of Trustees' Committee on Health Care for the Disadvantaged, which has been a consistent advocate on behalf of consumers of health care services, developed the* Statement on a Patient's Bill of Rights, *which was approved by the AHA House of Delegates February 6, 1973. The statement was published in several forms, one of which was the S74 leaflet in the Association's S series. The S74 leaflet is now superseded by this reprinting of the statement.*

The American Hospital Association presents a Patient's Bill of Rights with the expectation that observance of these rights will contribute to more effective patient care and greater satisfaction for the patient, his physician, and the hospital organization. Further, the Association presents these rights in the expectation that they will be supported by the hospital on behalf of its patients, as an integral part of the healing process. It is recognized that a personal relationship between the physician and the patient is essential for the provision of proper medical care. The traditional physician-patient relationship takes on a new dimension when care is rendered within an organizational structure. Legal precedent has established that the institution itself also has a responsibility to the patient. It is in recognition of these factors that these rights are affirmed.

1. The patient has the right to considerate and respectful care.

2. The patient has the right to obtain from his physician complete current information concerning his diagnosis, treatment, and prognosis in terms the patient can be reasonably expected to understand. When it is not medically advisable to give such information to the patient, the information should be made available to an appropriate person in his behalf. He has the right to know, by name, the physician responsible for coordinating his care.

3. The patient has the right to receive from his physician information necessary to give informed consent prior to the start of any procedure and/or treatment. Except in emergencies, such information for informed consent should include but not necessarily be limited to the specific procedure and/or treatment, the medically significant risks involved, and the probable duration in incapacitation. Where medically significant alternatives for care or treatment exist, or when the patient requests information concerning medical alternatives, the patient has the right to such information. The patient also has the right to know the name of the person responsible for the procedures and/or treatment.

4. The patient has the right to refuse treatment to the extent permitted by law and to be informed of the medical consequences of his action.

5. The patient has the right to every consideration of his privacy concerning his own medical care program. Case discussion, consultation, examination, and treatment are confidential and should be conducted discreetly. Those not directly involved in his care must have the permission of the patient to be present.

6. The patient has the right to expect that all communications and records pertaining to his care should be treated as confidential.

7. The patient has the right to expect that within its capacity a hospital must make reasonable response to the request of a patient for services. The hospital must provide evaluation, service, and/or referral as indicated by the urgency of the case. When medically permissible, a patient may be transferred to another facility only after he has received complete information and explanation concerning the needs for and alternatives to such a transfer. The institution to which the patient is to be transferred must first have accepted the patient for transfer.

8. The patient has the right to obtain information as to any relationship of his hospital to other health care and educational institutions insofar as his care is concerned. The patient has the right to obtain information as to the existence of any professional relationships among individuals, by name, who are treating him.

9. The patient has the right to be advised if the hospital proposes to engage in or perform human experimentation affecting his care or treatment. The patient has the right to refuse to participate in such research projects.

10. The patient has the right to expect reasonable continuity of care. He has the right to know in advance what appointment times and physicians are available and where. The patient has the right to expect that the hospital will provide a mechanism whereby he is informed by his physician or a delegate of the physician of the patient's continuing health care requirements following discharge.

11. The patient has the right to examine and receive an explanation of his bill regardless of source of payment.

12. The patient has the right to know what hospital rules and regulations apply to his conduct as a patient.

No catalog of rights can guarantee for the patient the kind of treatment he has a right to expect. A hospital has many functions to perform, including the prevention and treatment of disease, the education of both health professionals and patients, and the conduct of clinical research. All these activities must be conducted with an overriding concern for the patient, and, above all, the recognition of his dignity as a human being. Success in achieving this recognition assures success in the defense of the rights of the patient.

© 1975 by the American Hospital Association, 840 North Lake Shore Drive, Chicago, Illinois 60611
Printed in the U S A All rights reserved Catalog no S009 45M-3/75-4333 30M-4/77-5634

or she may not understand how important it is to follow the orders precisely. This situation is familiar to all physicians and cannot be said to apply only to patients who are elderly, foreign born or people of limited intelligence. One way to deal with a problem such as this is to provide each patient with a discharge diagnosis and a follow up plan which he will take home. Should a re-hospitalization be required on an emergency basis, such a document could be enormously useful. A solution to a difficult problem, and one devised by a health advocate who understood both the patient's and the doctor's dilemma and was able to develop a workable plan.

Assisting members of the health care team to understand the needs of patients is a major activity of patient advocates. Some hospitals regularly provide new staff, both professional and non-professional, with an orientation to the institution's philosophy of patient care and to the patient representative program. Introducing new physicians (including medical students) to the idea that the patient advocate can be a valuable resource for both the doctor and the patient in overcoming obstacles to good care is seen as a positive development in over 2000 hospitals in this country. In this age of medical specialization, care is often so fragmented that patients and physicians are unclear as to who bears primary responsibility for the patient. This depersonalization of care leads to frustration on everybody's part. Many patient-representative programs report that referrals are made as frequently by doctors as by patients with complaints. Frequently the patient representative or advocate in investigating a problem will learn that poor communication between the staff and the patient was the cause of the difficulty. In this kind of situation, explaining the problem to the physician and facilitating an exchange of information between the doctor and the patient can often be enough to resolve the problem.

### History of Patient Representation

At first, patient representatives worked in isolation from each other. Today there is a National Society of Patient Representatives of the American Hospital Association, founded in 1972, with a membership of 850 men and women working throughout the country in both community and teaching hospitals. Some patient representative departments have a staff numbering from 1 to 20 people and many programs use volunteers, in addition, to assist in their work, particularly in the over-600-bed institutions. The concept of patient representation began to gain acceptance in the late 1960's at a time when the dehumanizing aspects of hospital care were recognized. The patient representative role was developed to identify and document problem areas in the provision of services in order to stimulate appropriate changes in the delivery system. The fact that the patient advocate is a generalist, rather than a health administrator or a nurse specialist, for example, seems to enable him/her to view the system and the participants objectively enough to develop solutions to inadequacies in the system which are amenable to change.

In providing a centralized patient grievance mechanism to achieve resolution of patient problems, the patient representative is in a uniquely sensitive position to focus on potential problem areas before they are realized. It is in this area of risk management that their potential for cost savings is most likely to be realized. While patient satisfaction is not measurable in dollar terms, any reduction in litigation is potentially significant. The question has been raised that introducing another health professional at a time when health care costs are spiraling seems unwise. Calculating the costs for a three-person patient representative program in a community hospital of 300 beds, it has been estimated that the program would cost eight-tenths of one per cent of the total hospital budget.[3] Potentially, this modest expenditure could result in substantial savings by correcting inefficiencies in the system. Some examples have been changes in billing systems, out-patient department practices, and revising hospital menus. Similarly, using physician time to practice medicine rather than solving patient problems can be cost effective, as well.

### Why a Training Program?

Training people to ferret out these kinds of problems and to have the ability to effect necessary changes in the health system is a challenge that we at Sarah Lawrence welcome. During the two years the program has been on the drawing board, we have met with leading health care administrators around the country and visited a variety of hospital-based programs designed to meet the grievance needs of patients and the hospital administration's need to decrease the likelihood of conflict, as well as to improve hospital care. We became aware of the need to inform patients of their responsibilities in the use of the facilities which healthcare providers offer in order to utilize the available system appropriately. The curriculum for this program was designed at the graduate level because of our belief that effective health advocates need to be professionally trained on a level which will gain the acceptance of the other professionals to whom they must relate. Accomplishing systems changes means being able to transcend bureaucratic red tape and to relate effectively to staff at all levels.

An interdisciplinary curriculum was designed with course work in the history of health care, health law, health economics, anatomy-physiology, health care organization and concepts for change, health advocacy, interpersonal communication, and the extensive field work component. An Advisory Board of leaders in medicine, social work, nursing, health advocacy and health law was formed to advise on the curriculum and the overall program plan. New York State awarded the program the right to offer the Master of Arts degree and in March of 1980 the program was opened for applicants.

Funding from three private foundations has enabled us to develop this interdisciplinary program, to recruit a uniquely qualified faculty, and to award scholarships to assist students most qualified and needed in this field. Applications have been received from throughout the country and the entering class represents a mix of ages, ethnic and racial groups and sexes, although most students in the first class are women. Special funds were awarded to people interested in advocacy for the elderly and a number of these students are themselves women in their mature years. However, we have already discovered that we can make very few generalizations about the kind of people interested in training as health advocates. Our younger applicants are just as likely to want to specialize in geriatric services as our mature students.

### The Health Advocacy Program

Our program is designed as a 36-academic-credit program spread over a three semester plan. The first semester consists of course work and occasional visits to urban hospitals. The second and third semesters also include two days a week of on-the-job training in a large teaching hospital, a nursing home, a community health center or perhaps a prison health program. The summer between the second and third semesters will include a five week, full time internship as a health advocate or patient representative in a hospital or health facility selected by the student and approved by the program. For students from out-of-town, this will probably mean training in their local hospital.

While the term "advocacy" surprises or angers some people, it is important to distinguish advocacy from its frequent misinterpretation—adversary. The Sarah Lawrence program was designed to train *advocates for* better health services, not people who have the goal of fighting doctors or health care institutions. Since there are now over 2000 hospitals[4] with patient advocacy programs, it would seem fair to speculate that hospitals see the advantage to themselves and their patients of such programs. In fact, when Sarah Lawrence College announced its program, nearly 100 hospitals responded with requests for help in establishing a health advocacy program or asked to be notified when our graduates would be ready to seek work.

### How Does the Patient Representative Benefit the Physician?

Even if one agrees that a person with this kind of training could be helpful to the patient, what is the possibility that physicians will accept someone to serve as an ombudsperson if they see themselves capable of taking full care of the patient? Clearly, this can be a problem for some physicians, yet others are quick to admit that a busy practice does not allow the freedom to spend enough time with patients to deal with all their concerns, no matter how legitimate. A physician recently described a patient who had undergone major surgery and needed to know when he should realistically return to work as president of a large corporation. Despite the fact that his doctor was a superb surgeon, the patient could not manage to get him to focus on his need to discuss follow-up care; while grateful for the good medical care he received, he became angry and frustrated that he could not command the interest of his physician to deal with the realistic problem facing him. How easy it is to lose sight of another person's priorities! When health advocates make it clear to patients that these are the kinds of problems they can tackle, everybody benefits, most of all the patient.

In serious cases of hospital or physician failure to deliver appropriate care, the patient representative can serve a very important role, particularly if brought into the case from the very beginning. In the case of negligence, leading to death, many hospitals will explain the actual circumstances of the death to the family. The careful support of the patient representative during such a crisis can help families to understand the reality that mistakes are made and to accept that the hospital and staff are deeply agonized over such tragic events. The alternative approach to this kind of truth-telling often results in an angry, bereaved family which expresses its frustration in legal action because it sees the hospital as an enemy rather than as a place peopled by caring, vulnerable professionals. Naturally, incidents, such as the one described above, would be carefully researched and documented by the patient representative and the hospital legal staff in order to assure that the same mistake could not happen again. The patient representative, who functions rather independently and is not beholden to any one constituency in the hospital, may be in an excellent position to study such situations objectively. This objectivity can lead to a clear cut need for a change in the system. To be sure, this role requires competent people of tact, good judgement, and the drive to improve the system. We think the system is open to these kinds of changes and feel confident that graduates of the Health Advocacy Program can become leaders in this growing field.

### Summary

In summary, this paper has described a new and first master's program in health advocacy designed to train advocates or patient representatives who will serve in health care settings with the primary objective of facilitating patient/physician understanding, educating patients about their legitimate and appropriate rights and responsibilities as patients, and effecting necessary systems changes to accomplish these goals.

### REFERENCES

1. Report of the Secretary's Commission on Medical Malpractice, DHEW Publication No. (OS) 73-88, 1973
2. Marks, JH & Richter, ML: The genetic associate: A new health professional. *Am J Publ Health 66, 388,* 1976
3. Hogan, NS: *Humanizing Health Care,* Medical Economics Book Division, 1980, Oradell, NJ, p. 13
4. Hospital Statistics, 1979 Edition. Chicago: American Hospital Association, 1979

# The "Exceptions" to Informed Consent

(Second of Two Parts)

ALAN MEISEL, J.D.

## Part II: Proxy Decision-Making

### Summary

**In the first part of this article, Professor Meisel discussed the requirements of the informed consent doctrine, the exceptions to these requirements, and the role that the exceptions play in reconciling the competing social values of individualism and health. In Part II, he addresses how medical decisions are to made under the informed consent doctrine when any one of the exceptions is properly invoked.**

When an exception to the informed consent doctrine is properly invoked, the physician is relieved of either his duty of disclosure, or his duty of obtaining consent from the patient, or both. As I have previously indicated, the cases are often unclear as to which duty or duties is suspended when any given exception is invoked, though the objectives of the informed consent doctrine and the circumstances which justify invoking a particular exception suggest the effect that the invocation of each exception should have.

Remaining to be considered is the question of how the decision about medical treatment is to be made when the patient is disqualified from making it. In such a situation a proxy decisionmaker, i.e., someone other than the patient or the physician, may be required. This problem is most acute with respect to the incompetency exception, and of considerably less importance where the emergency, therapeutic privilege, and waiver exceptions are concerned. It is unlikely that a proxy decisionmaker will be necessary in an emergency, if an emergency is strictly defined as a situation in which the patient's life or health would be put at substantial risk if treatment were delayed. The same considerations allowing the doctor to dispense with the patient's informed consent permit dispensing with proxy consent. When the therapeutic privilege is invoked, it is not clear what purpose full disclosure to a proxy serves if the patient still retains decisional authority. If, however, the invocation of the therapeutic privilege strips the patient not only of his right to full disclosure but of his right to decide as well, then proxy decisionmaking must occur. Finally, it is unlikely that there is much room for a proxy to play a role in decisionmaking when the waiver exception is applied. If the patient waives only his right to be informed but not his right to decide, then by definition no proxy is required to make a decision. And if he waives the right to decide, the proxy should be designated by the patient himself, and will likely be the doctor.

The balance to be struck in medical decisionmaking between the competing values of individualism and health is determined in the first instance by the presumption that society's interest in the promotion of health is ordinarily to be subordinated to its interest in the promotion of individualism. The manner in which the various exceptions to the informed consent doctrine are framed determines the circumstances under which and the extent to which the balance may be shifted away from individualism and in favor of the promotion of health.

In practice, however, the manner in which the exceptions are defined may have only a limited effect on the actual balance of values that prevails. This is primarily because medical decisionmaking operates at an extremely low level of visibility to nonparticipants in the process. The application of the legal rules in any particular case is shielded from the view of all but the participants themselves—the doctor and possibly other medical personnel, and the patient and possibly relatives and friends. Because of the physician's authority and control over relevant information and because of traditionally deferential patient attitudes toward physicians, it is likely that the balance between individualism and health is determined not by the formal legal rules, but by the doctor's power in the first instance to determine whether the conditions exist for the invocation of an exception. It is the doctor who determines that there is an emergency or that the patient has waived his right to have disclosure made or to give consent. And it is the doctor who determines that the therapeutic privilege should be invoked or that the patient is incompetent. The power, if not the right, to

---

ALAN MEISEL, J.D., Associate Professor of Law and Psychiatry, University of Pittsburgh, Schools of Law and Medicine, Pittsburgh, PA. (Western Psychiatric Institute and Clinic)

Copyright 1981 by Alan Meisel.

determine whether conditions are such that an exception should be invoked is almost exclusively within the hands of the physician. In a rare case, the patient or someone acting on his behalf might institute legal process to prevent the physician from rendering treatment without first having obtained the patient's informed consent, but the atmosphere of medical decisionmaking and treatment is rarely conducive to such a course of action.

In light of the physician's broad discretion to determine whether conditions are appropriate for the invocation of an exception, the consequences of the invocation of an exception acquire substantial importance. If invoking an exception empowers the physician to make the medical decision unilaterally—that is, not only without the patient's participation, but also without the participation of a proxy decisionmaker as well—the balance of values may be struck significantly in the direction of health at the expense of individualism. On the other hand, if the invocation of an exception requires the physician to bring some third party into the medical decisionmaking process or to entrust the decision entirely to a third party, the risk to individualism may not be as great.

The problem of who is to make the medical decision when the patient is disqualified from doing so is one that has been the subject of only scant analysis by the courts and of almost no legislative attention, thus leaving a large void in the law governing a situation which occurs rather routinely in medical practice. The scholarly commentary is more helpful but the discussions deal primarily with extraordinary cases—terminal illness,[1] organ donation and transplantation,[2] and mentally disabled patients[3]—rather than the vast majority of cases in which the problem arises. In summary, no comprehensive and authoritative discussion exists of the problem of how medical decisions are to be made for an individual who has been disqualified from doing so for himself.[4]

At present, the consequences of the invocation of an exception to the informed consent doctrine are ill-determined. As previously indicated, it is often not clear whether an exception suspends the duty of disclosure, the duty of obtaining consent, or both. And regardless of which duty or duties are suspended, it is also quite uncertain as to who is then to make the decision which the patient would have made had the exception not been invoked. In a closely related context, this uncertainty has been accurately characterized by the National Commission for the Protection of Human Subjects as a "constant limbo."[5] When the patient is disqualified from participation in the medical decisionmaking process, present practice is that sometimes the physician makes the decision, sometimes a family member is called upon to do so, and sometimes judicial proceedings are instituted by the physician, hospital administrators, or family members.

Common-law rules for determining which means of proxy decisionmaking should be utilized under what circumstances are sparse almost to the point of nonexistence. About the only clear situation is an emergency in which, by definition the physician makes the treatment decision. Although the much debated *Quinlan*[6] and *Saikewicz*[7] cases suggest that the proper forum for decision making is the courts when the question involves the administration or cessation of treatment to the *terminally* ill, no similar guidance has been offered for the great number of cases involving medical decisions in more ordinary contexts.

What is indisputable is that the balance of values between individualism and health is as significantly affected by the identity of the individual who determines whether conditions are appropriate for invoking an exception and by the identity of the proxy decisionmaker as it is by the legal definition of the exceptions. The confusion, in what little case law there is, exists in large part because of the societal ambivalence over individualism and health, but also in part because of the limitations of the judicial process for the prescription of a detailed set of rules. The scattered legislative scholarly forays into this problem give some hope that it will be addressed in a forum more conducive to this kind of lawmaking, but to date the results still leave much to be desired.

## Conclusion

The vehement criticism of the doctrine of informed consent by advocates for the medical view of decisionmaking—the view that medical decisions are properly made by physicians and that the doctrine of informed consent seeks to divest them of this prerogative—results from a fundamental misunderstanding of what the doctrine requires and permits. The doctrine of informed consent allocates decisional authority within the doctor-patient relationship. In so doing, it seeks to promote patient self-determination in the realm of medical decisionmaking through the twin duties imposed upon the physician—the duty to disclose information to the patient and the duty to obtain the patient's consent. Although informed consent places a heavy emphasis on patient self-determination, the exceptions that have developed for emergencies, for incompetent patients, for waiver, and for therapeutic reasons, permit this emphasis to be ameliorated in certain situations to achieve other desirable goals and to accommodate other laudable and deeply held values. Each exception is a vehicle for the expression and implementation of health values.

The unified informed consent doctrine—that is, the general rule and the exceptions taken together—recognizes that the promotion of health is not inherently at odds with the allocation of primary decisional authority to the patient, but rather

> that healing must occur in the one to be healed, not in his physician or in the no man's land between

> each individual; that each sick man must be his own patient as well as his own physician; that no individual can delegate his healing power to another person any more than to his State. As the individual is the guardian of all of his liberty, so he must also guard his own healing power, therapy being a part of his nature.[8]

The continued legal recognition of the existence of each of the exceptions is vital to the medical decisionmaking process. A process monolithically concerned only with individual self-determination is no more acceptable than a process in which all decisional authority is reposed in the physician. When judiciously defined and applied, the exceptions to the informed consent doctrine accord health values their due. However, the exceptions can be and have sometimes been defined so broadly as to dilute, if not dissolve, the fundamental duties imposed by the doctrine—disclosure of information and securing of consent—and to undermine its essential purpose—patient participation in medical decisionmaking. Even when the definitions of the exceptions are narrowly circumscribed to protect the overriding interest in individual self-determination, the manner in which the exceptions are applied can also threaten individualism with unwarranted erosion.

It is certainly not malice, nor am I sure that it is even insensitivity, which in practice upsets the allocation of decisional authority established by the informed consent doctrine. Rather, it is the structure of medical decisionmaking that is responsible. What I am suggesting is that because the nature of medical practice and medical tradition are such that physicians are not well equipped to interject individualistic concerns into medical decisionmaking—or at least to accord primacy to individualism—there must be some external force for bringing individualistic values into play. For the most part the courts have, in permitting the exceptions to informed consent to be defined and applied broadly, failed to recognize this and missed an opportunity to put decisional authority where the informed consent doctrine intends it to be.

Of course, even if the courts were to attend to this task properly, there is no assurance that medical practice would conform to legal prescription. The ultimate hope for assuring that individualistic concerns come into play in medical decisionmaking may lie with assertive and well-educated consumers—patients who are aware of the extent of their decisional authority and who do not hesitate to exercise it. The educational effect of the law—through the continual and explicit statement in case, statute, and commentary of the primacy of individualism—might aid in making patients guardians of their own decisional authority. Yet the deterrent effect of law cannot be overlooked in assuring that the proper balance between individualism and health be maintained, and whether or not this effect operates depends upon judicial willingness to respect the balance prescribed by the informed consent doctrine.

## ACKNOWLEDGMENT

This is an abridged version of an article which originally appeared in the Wisconsin Law Review, vol. 1979, pages 413-485. I am deeply indebted to James L. Flannery, a second-year student at the University of Pittsburgh School of Law, for his substantial editorial assistance in the preparation of this article. This work has been supported in part by PHS Research Grant No. MH27553, NIHM Center for Studies of Crime and Delinquency and Mental Health Services Development Branch.

## REFERENCES

1. *See* Brant, *The Right to Die in Peace: Substituted Consent and the Mentally Incompetent,* 11 SUFFOLK L. REV. 959 (1977); Cantor, *Quinlan, Privacy and the Handling of Incompetent Dying Patients,* 30 RUTGERS L. REV. 243, 245 n. 10 (1976); Kindregan, *The Court as the Forum for Life and Death Decisions: Reflections on Procedures for Substituted Consent,* 11 SUFFOLK L. REV. 919 (1977); Schultz, Swartz, & Appelbaum, *Deciding Right-to-Die Cases Involving Incompetent Patients: Jones v. Saikewicz,* 11 SUFFOLK L. REV. 936 (1977); Sullivan, *The Dying Person—His Plight and His Right,* 8 NEW ENG. L. REV. 197, 201 (1972); Note, *Suicide and the Compulsion of Lifesaving Medical Procedures: An Analysis of the Refusal of Treatment Cases,* 44 BROOKLYN L. REV. 285, 291 *passim* (1978).
2. *See* Baron, Botsford & Cole, *Live Organ and Tissue Transplants from Minor Donors in Massachusetts,* 55 B.U. L. REV. 159 (1975); Robertson, *Organ Donations by Incompetents and the Substituted Judgment Doctrine,* 76 COLUM. L. REV. 48 (1976); Capron, *Informed Consent in Catastrophic Disease Research and Treatment,* 123 U. PA. L. REV. 340, 423-29 (1974). One court has justified an organ transplantation from a severely mentally retarded adult who was incompetent to his brother, in part justifying it on the basis of "benefit" to the donor. *See* Strunk v. Strunk, 445 S.W. 2d 145 (Ky. App. 1969). *But see In re* Pescinski, 67 Wis. 2d 4, 226 N.W. 2d 180 (1975).
3. AMERICAN ASSOCIATION OF MENTAL DEFICIENCY, CONSENT HANDBOOK 14-20 (1977); Friedman, *Legal Regulation of Applied Behavior Analysis in Mental Institutions and Prisons,* 17 ARIZ. L. REV. 39, 75-91 (1975); Murphy, *Total Institutions and the Possibility of Consent to Organic Therapies,* 5 HUMAN RIGHTS 25 (1975); Schwartz, *In the Name of Treatment: Autonomy, Civil Commitment, and the Right to Refuse Treatment,* 50 NOTRE DAME LAW. 808 (1975); Shapiro, *Legislating the Control of Behavior Control: Autonomy and the Coercive Use of Organic Therapies,* 47 SO. CAL. L. REV. 237, 311-15 (1974); *Developments in the Law—Civil Commitment of the Mentally Ill,* 87 HARV. L. REV. 1190, 1344-58 (1974); Comment, *Advances in Mental Health: A Case for the Right to Refuse Treatment,* 48 TEMPLE L.Q. 354 (1975).
4. Gauvey, Leviton, Shuger, & Sykes, *Informed and Substitute Consent to Health Care Procedures: A Proposal for State Legislation,* 15 HARV. J. LEGIS. 431 (1978).
5. U.S. Dep't of H.E.W., *Protection of Human Subjects—Research Involving Those Institutionalized as Mentally Infirm: Report and Recommendations of the Nat'l Comm'n for the Protection of Human Subjects of Biomedical and Behavioral Research,* 43 Fed. Reg. 11,328, 11,352 (1978).
6. *In re* Quinlan, 70 N.J. 10, 355 A. 2d 647, *cert. denied sub nom.* Garger v. New Jersey, 429 U.S. 922 (1976).
7. Superintendent of Belchertown State School v. Saikewicz, 370 N.E. 2d 417 (Mass. 1977).
8. THE JEFFERSON-DUNGLISON LETTERS 93 (J. Dorsey ed. 1960), *quoted in* Aring, *On Improving the Public Health,* 239 J.A.M.A. 2557, 2558 (1978).

# Werner Forssmann (1904-1979) and His Unusual Success Story

JAMES M. STECKELBERG, B.S., RONALD E. VLIETSTRA, M.B., Ch.B., F.A.C.C.,
JURGEN LUDWIG, M.D. AND RUTH J. MANN, B.S.

The "heart attack" death, on June 1, 1979, of Dr. Werner Forssmann brings to mind the intriguing story of this man's belated rise to world fame as a 1956 Nobel Laureate in Medicine. The prize was awarded for an experiment he had done on himself 27 years earlier and had reported in publication 50 years ago this month.

The year was 1929. Forssmann, at age 25, and a graduate of Berlin's Friedrich Wilhelm University, had just in February received his license to practice medicine. According to his own account,[1] his dreams of becoming an internist had ben shattered when his application to work with Dr. Georg Klemperer at Moabit Hospital in Berlin was declined. After 3 miserable weeks in midwifery, Forssmann found a position in the surgical department at the Red Cross regional headquarters in the small town of Eberswalde, 50 miles northeast of Berlin. There he found an ally and mentor in Dr. Richard Schneider, his department head, to whom he proposed his plans for introducing a ureteral catheter via an antecubital vein which would "inevitably find its way to the heart."[1]

Although Dr. Schneider denied permission for Forssmann to attempt the procedure either on patients or on himself, he could not deter Dr. Forssmann, who was so convinced of the safety and value of the procedure that, early in the summer of 1929, he resolved to proceed without the sanction of his superior. He relates[1] that after deceiving the surgical nurse into thinking that she would be the subject, and thus gaining access to the necessary sterile instruments, he persuaded her into allowing herself to be tied to the operating table (preventing her from interfering with his plans), anesthetized his own left cubital fossa, advanced the catheter into his right atrium, and then climbed several flights of stairs to the x-ray department to document his achievement. On November 5, 1929, the account of Forssmann's experiment was published in the prestigious *Klinische Wochenschrift.*[2] An abbreviated translation of his article follows:

> In cases of sudden cardiac failure, a direct injection of drugs into the heart may, on occasion, save the patient's life. However, this is a dangerous undertaking because coronary vessels can be lacerated and fatal cardiac tamponade may occur. Furthermore, perforation of the pleura may cause fatal pneumothorax. For that reason, many physicians wait with an intracardiac injection until the very last moment and thus lose precious time. For this reason, I decided to find a safer approach for intracardiac injection and decided to attempt the introduction of a catheter into the right side of the heart from the venous system.
>
> I first attempted this approach on cadavers by introducing the catheter into a vein of the cubital fossa of the arm. I selected the left arm because the catheter has to make less of a curve when it passes through the subclavian vein and the innominate vein. After I had succeeded with this procedure on cadavers, I tried the same on myself. I first asked a colleague to puncture a vein in my right cubital fossa with a thick needle. I then introduced a ureteral catheter that was well oiled and 4 Charriére (4 French) in size and pushed this catheter 35 cm upward. At this point, my colleague felt that the experiment had become too dangerous and it was terminated. I felt perfectly well. A week later, I attempted the procedure again—this time alone. I performed local anesthesia and carried out a phlebotomy in the left cubital fossa and then introduced the catheter in its entire length of 65 cm. The contact between the catheter and the inner wall of the veins caused a sensation of warmth but at no time any pain. When I rocked the catheter at the level of the subclavian vein, I felt a particularly intense warmth behind the clavicle and experienced some coughing, which I ascribed to an irritation of branches of the vagus. I examined the position of the catheter on an x-ray screen with the help of a nurse who held a mirror in front of the screen. I found that the catheter reached

---

JAMES M. STECKELBERG, B.S., Mayo Medical School; RONALD E. VLIETSTRA, M.B., Ch.B., F.A.C.C., Division of Cardiovascular Diseases and Internal Medicine; JURGEN LUDWIG, M.D., Department of Pathology and Anatomy; and RUTH J. MANN, B.S., History of Medicine Librarian, Rochester, Minnesota.

Reprinted with permission of Mayo Clin. Proc., Nov. 1979, Vol. 54.

into the right atrium but not farther. I felt no cardiac dysrhythmia and experienced no discomfort when I had to walk a rather long distance from the surgical theater to the x-ray department, where I also had to climb stairs, all the time with the probe in my heart. The only complication that I experienced subsequently was a mild inflammation in the area of dissection of the vein.

Little risk is involved in this procedure because in the report by Volkmann a case was described in which a puncture needle had been in the right ventricle for 15 minutes without causing damage. In 1861, Chauveau and Marey measured blood pressure in animals by introducing measuring instruments into the heart from the jugular vein and carotid arteries.

I used my catheter clinically in a patient with terminal purulent peritonitis following perforation of an appendix. I introduced the catheter the same way as I had done it on myself and pushed it into the venous system for a distance of 60 cm. I then infused glucose solution and suprarenin [epinephrine] hydrochloride and strophanthin. This produced an improvement in the patient's clinical status. The pulse (and breathing) slowed down, and the state of consciousness became normal. However, a few hours later, the patient died. I left the catheter in place and studied its position at autopsy. I found that the catheter had passed through the right atrium with its tip sticking 2 cm into the inferior vena cava. There was no evidence of vascular damage.

I would recommend my method and should point out that the catheter could be introduced from any other site. The greatest advantage of my method is the avoidance of the chest wall and of the myocardium, structures that must be perforated during direct intracardiac injection. The catheter can be introduced in a very short time and pushed forward within 3 to 4 seconds. In a state of circulatory failure, a central infusion can thus be accomplished which would be much more effective because the drugs could act faster than they would if they were injected in the periphery and had to be transported to the heart. Furthermore, blood can be withdrawn through the catheter from the heart, and thus a central blood letting procedure can be carried out. A further advantage of this method is that it would allow for intravenous injections—for instance, of roentgenologic contrast material for studying the gallbladder or the renal pelvis system, or for injections or infusions. In such a case, the catheter should be introduced only for 25 to 30 cm, and one can thus inject substances very slowly, without fear of losing the vein. For these purposes, a ureteral catheter should be kept in sterile olive oil, together with a fitting needle. The mandrin should be oiled, too.

Finally, I would like to point out that the method that I have used provides many possibilities for future metabolic studies and for studies of cardiac functions which I already have embarked upon.

Shortly after this publication, Forssman went back to Berlin, this time to the surgery department of the eminent Professor Sauerbruch at the Charité. Although Forssmann himself was clearly excited about his experiment, he soon discovered that his enthusiasm was not shared by the German medical community at large. In fact, at the Charité, Forssmann met hostility, antagonsim, and disputing claims of priority. After only 3 months, he returned to the haven of Eberswalde. Over the next 2 years, at Eberswalde and again at the Charité, Forssmann made several investigative attempts in the use of the cardiac catheter for radiologic imaging of the right side of the heart, both in dogs and on himself, generally with inadequate results.[3] These attempts were reported by Forssmann in 1931[4] and appeared to arouse little or no interest.

Forssmann turned to surgery and eventually to urology. During World War II, he served for more than 6 years as an army surgeon in Germany, Norway, and Russia. He returned home weary, embittered, and half starved.[1] After the war, he had a spell as a "country doctor" in the Black Forest hamlet of Wambach and then returned to urology in Bad Kreuznach, southwest of Mainz.

Since 1931, Forssman had not persisted with his catheter research so that when, in the early fifties, his name was gradually becoming known in cardiology circles, the field had progressed well beyond his knowledge and expectations. After winning, with André Cournand and Dickinson Richards, the 1956 Nobel Prize, Forssmann reputedly commented, "I feel like a village parson who has just learned that he has been made bishop."[5]

With the public and medical community's expectations of him suddenly rising, the temptation to return to cardiology must have been great indeed, but Forssmann states, "The subject had progressed too far in the interim, and when I considered it objectively I was certain I'd never be able to catch up . . . I decided it was more honest to content myself with the role of 'leading fossil!"[1] Thus, we have a Nobel Prize winner whose knowledge and experience in cardiology, save for a few experiments 27 years earlier, were rudimentary at best.

Forssmann's life was drastically changed by the sudden fame and expectations associated with the Nobel Prize. One such change was that the previously elusive position as the head of a large surgical department was suddenly attainable, and Forssmann concluded that he "must find a wider sphere of activity."[1]

He soon accepted a position at the Evangelical Hospital in Düsseldorf, but was almost immediately in a bitter battle with the board of directors over proposed reforms. After 2 years, the rivalry was resolved and Forssmann seemed content to spend the remainder of his professional years in Düsseldorf.

Why then did Forssmann win a Nobel Prize? What was the nature of his contribution to the development of cardiac catheterization? The concept of a catheter introduced via peripheral vessels into the heart was an old and established one. Claude Bernard, as early as 1844, had gained access to both the left and the right heart chambers in the horse via the carotid arteries and jugular veins.[3] Chauveau and Marey in 1863[6] published a classic text detailing their studies of circulatory physiology in the horse, to which Forssmann refers, including recordings of right atrial and right and left ventricular pressure curves with the use of a double-lumen catheter introduced via the carotid and jugular vessels. By the 1880's, the technique was being widely used in animals for physiologic studies. (For an excellent review of the history of heart catheterization, see Cournand.[3])

Forssmann did not extend the technique to clinical cardiology either; though he was cognizant of the potential use of the catheter in angiography, metabolic studies, and cardiac function tests, his single clinical use was in the treatment of peritonitis. The systematic and scientific development of cardiac catheterization as a powerful diagnostic tool in cardiology was the work of others, including André Cournand and Dickinson Richards, Forssmann's co-winners of the 1956 prize; it is unlikely that Forssmann's work influenced this future development to a significant degree.

Then what was it about Forssmann's experiment that so impressed the Nobel committee? It seems that it must have been his courage in undertaking his historic experiment in the first place. Not that Forssmann foresaw great physical risks in the experiment; on the contrary, he had concluded on the basis of the earlier animal studies and direct intracardiac puncture experiments that there was no danger: "People often ask me if I wasn't afraid. I can honestly say no, since there was no danger in inserting the ureteral catheter as long as it was done gently."[1] Most impressive, however, was his courage at undertaking, in the spirit of his convictions, an experiment, which, in the context of the times, violated a strict, authoritarian, dogmatic view of what was and was not possible.

Finally, it is sobering to reflect on today's relevance of the words spoken by G. Liljestrand[7] at the presentation of Doctor Forssmann's Nobel Prize:

> It must have required firm conviction of the value of the method to induce self-experimentation of the kind carried out by Forssmann. His later disappointment must have been all the more bitter. It is true that the method was adopted in a few places—in Prague and in Lisbon—but on the whole Forssmann was not given the necessary support: He was, on the contrary, subjected to criticism of such exaggerated severity that it robbed him of any inclination to continue. This criticism was based on an unsubstantiated belief in the danger of the intervention, thus affording proof that—even in our enlightened times—a valuable suggestion may remain unexploited on the grounds of a preconceived opinion. A contributory cause in this instance was presumably that Forssmann was working in a milieu that did not clearly grasp the great value of his idea.

## REFERENCES

1. Forssmann W: Experiments on Myself: Memoirs of a Surgeon in Germany. New York, Saint Martin's Press, 1974, pp 83; 107; 284; 335
2. Forssmann W: Die Sondierung des rechten Herzens. Klin Wochenschr 8:2085-2087, 1929
3. Cournand A: Cardiac catheterization: developmment of the technique, its contributions to experimental medicine, and its initial applications in man. Acta Med Scand [Suppl] 579:7-32, 1975
4. Forssmann W: Ueber Kontrastdarstellung der Höhlen des lebenden rechten Herzens und der Lungenschlagader. Munch Med Wochenschr 78:489-492, 1931
5. Cournand A: Preface to Forssmann W[1]
6. Chauveau A, Marey EJ: Cited by Cournand A[3]
7. Liljestrand G: Cited by Cournand A[3]

*Mark Your Calendar*

## Connecticut State Medical Society
## 189th Annual Meeting

Annual Meeting of the House of Delegates
Wednesday, April 29, 1981 — 8:30 A.M.
Ramada Inn, North Haven

General Scientific Program
Wednesday, May 27, 1981
Sheraton Park Plaza Hotel, New Haven

***Plan Now to Save the Dates***

# Quality of Patient Care Review

PSRO II

**A. Overview**

In February, 1980, the Office of Professional Standards Review Organizations (a division of the Department of HHS) released a draft quality review policy, which is expected to replace the PSRO program's Medical Care Evaluation (MCE) study policy in 1981. The Connecticut Area II PSRO was given one year advance approval to modify its current (1980) acute care quality assurance activities in accordance with this new quality review policy.

**B. Areawide Emphasis**

The principal emphasis of Area II's new quality assurance approach is on the performance of valid, reliable and acceptable areawide studies. These studies attempt to identify normative patterns of care for the area against which individual hospital practice patterns can be measured. Internal hospital audits remain the responsibility of individual institutions.

The performance of areawide studies, rather than single-hospital studies, has many advantages:

1. Allows comparisons among institutions giving hospitals an external perspective not previously available.
2. Allows the PSRO to assume a more clearly defined role to strengthen its leadership capabilities, and to increase its role as a technical resource among acute care institutions.
3. Eliminates extensive and costly duplication of efforts between hospitals and the PSRO.
4. Gives the PSRO control over the validity and reliability of data collected.
5. Maximizes the utility and dissemination of the extensive and complex information accumulated by the PSRO.
6. Allows for the more efficient and effective use of PSRO physician and staff resources.
7. Encourages greater depth to the involvement of area practitioners in the PSRO.
8. Allows for more integrated and continuous problem identification and corrective activities.

**C. Quality Review Study Process**

Area II has an established, experienced Quality Assurance (QA) Committee which is responsible for recommending acute care Quality Review Study (QRS) policy and for supervising all acute care QRS activities.

The development and completion of an areawide study includes several phases. Monitoring of the QRS process occurs throughout each phase.

**D. Topic Selection**

As a first step in selecting QRS topics, the Area II PSRO develops a "problem list" which identifies between six and eight problems affecting the quality of care in its service area (New Haven and Litchfield counties.) This "problem list" is developed using findings from concurrent review; analysis of data collected by the PSRO, Medicare, Medicaid and individual hospitals; and through interactions with practitioners, providers and other health agencies.

All area hospitals, delegated and nondelegated, are requested to submit a list of potential problems or QRS topics to the PSRO. This list should contain no more than five problems, listed in order of priority. When choosing and prioritizing potential problem areas, hospitals should emphasize those areas whose study could reasonably lead to the maintenance or improvement of the quality of care provided. Hospital lists should be submitted annually.

Two types of quality profiles are generated from the Area II hospital data-base. The first type of profile displays mortality rates by major diagnostic category, hospital and physician. The second profile type displays complication rates for the same three groupings.

Individual hospital "problem lists" and profile analysis results are merged with concurrent review findings and other health-provider inputs into an areawide "problem list." This list is then prioritized by the QA Committee. When prioritizing, the Committee considers the number of times a problem was suggested by area hospitals, whether hospital problems are substantiated by the Area II data-base, and the seriousness of suggested problem areas. This prioritized list is sent to all area hospitals, delegated and nondelegated, for comment. The QA Committee considers hospital comments and votes to approve a final, prioritized "problem list."

The QA Committee chooses the topics for four areawide studies from this prioritized problem list. With advance approval of the QA Committee, a hospital may substitute an individual QRS in lieu of participation in an areawide study. Criteria to be used by hospitals who wish to substitute an individual QRS in lieu of one of Area II's proposed studies are attached. These same criteria are also used by the QA Committee when deciding upon the exact methodology to be employed for the study of proposed QRS topics.

### E. Establishment of a Specialty Sub-Committee

For each study topic, a specialty sub-committee is established consisting of physicians who have ongoing involvement or expertise in the study area. Allied health professionals are included on sub-committees as appropriate. The chairman of the sub-committee is asked to sit as an ad hoc member of the QA Committee to provide an information link to the QA Committee. In addition, hospital personnel such as utilization review coordinators and medical records administrators/technicians may be asked to sit as technical advisors to the sub-committee and QA Committee during all phases of the study.

The sub-committee is responsible for developing criteria which are clinically meaningful and valid. The sub-committee's responsibilities for initial criteria development usually last six to eight weeks.

### F. Criteria Review and Pretest

The specialty sub-committee submits its criteria set to the QA Committee and to all area hospitals for review and comment. The QA Committee allows hospitals six to eight weeks to review criteria in order to enable every Hospital Audit Committee time to schedule a discussion.

During this time, two or more hospitals are requested to pretest study criteria on a sample of medical records to identify potential data collection problems. Area II staff review the criteria with the audit analyst from each of these hospitals prior to the pretest being implemented. An Area II staff member also abstracts a sample of medical records from each of these hospitals in order to identify additional problems. At the end of the pretest, the hospital audit staff and Area II staff meet to discuss the difficulties encountered during the pretest.

A list containing every question identified during the pretest is presented to the specialty sub-committee along with all of the recommendations from the participating hospitals. The final criteria set is developed and submitted to the QA Committee for approval. The QA Committee must vote to approve the criteria set prior to the study being implemented by the PSRO.

In addition, prior to implementing the study, Area II staff develops data forms and a detailed manual which identifies every possible response to be included in the study. These forms and procedures are made available to every hospital for their use internally as well as for use in the area-wide study.

### G. Implementation and Data Collection

Data collection is performed by hospital audit personnel under the supervision of Area II staff. Area II staff are responsible for training hospital abstracters in the collection of QRS data and for monitoring their collection activities. The data collection phase takes six to eight weeks depending upon the size of the study.

### H. Data Analysis and Display

Study data are submitted to Area II for tallying and analysis. Data are entered into a computerized database for interactive analysis when funds are available. Staff's role is to perform analysis linking many of the variables within the study. Comparative analysis has shown that computerization is more cost effective than manual analysis, if one includes the cost of staff time in the study.

After the initial analysis is complete, the specialty sub-committee is reconvened to review the data-displays. At this point, additional questions may be asked of the data. A final data-packet with narrative analysis is developed and presented by the sub-committee to the QA Committee for their review and comment. The data-packet is then modified as the result of QA Committee input.

### I. Data Distribution and Recommendations

The specialty sub-committee, using the QA Committee's recommendations, prepares information packets to be submitted to each hospital. Within a hospital, QRS results are sent to the Chief Executive Officer, Chief of Medical Staff, Chairman of the Board of Trustees and other appropriate medical staff members, (i.e., audit committee chairman, department chiefs). In providing such information, the PSRO must comply with the confidentiality requirements of Section 1160 of the Social Security Act and applicable regulations.

A standard information packet has been developed and includes:

1. An individualized letter describing the hospital's performance in the study.
2. A "sign-off" sheet which requires signatures from the hospital's Chief Executive Officer, Chief of Medical Staff, audit committee chairman and a member of the Board of Directors. This "sign-off" sheet must be returned to the PSRO within a specified time period.
3. Hospitals which display behavior outside the normative range must submit written explanations within a specified time period.

### J. Feedback and Corrective Action

The specialty sub-committee reconvenes as necessary to review hospital explanations and to make recommendations to the QA Committee concerning steps for further action. The QA Committee has the option of working with individual hospitals to develop corrective action plans or making recommendations to the Area II Board. Depending on the severity of the problem and the corrective action developed, a restudy will take place under the supervision of the QA Committee. This process will be repeated until problems identified through the study are resolved.

# Making PSRO Work for Your Medical Staff

## JAMES M. SAVAGE

As the influence of Professional Standards Review Organizations (PSROs) expands throughout the country, the concerns of hospital medical staffs continue to grow. Confronted with these review organizations, medical staffs seek to identify their rights relative to federally mandated PSRO directives as well as determine how they can gain strong input into the direction of PSRO activities.

Developing a means to effect change in PSRO policy and operations is not a simple task for medical staffs. In order to fully understand their role and prerogatives with the PSRO, physicians must decipher no less than 1,500 pages of federal regulations, program manuals, and transmittals from the Department of Health and Human Services (HHS). Given the difficulty of identifying and understanding the PSRO's activities, medical staffs must create effective channels of communication with the PSRO in their own federally designated region.

In attempting to communicate and work with their respective PSRO, medical staffs can establish advisory groups. The advisory group, representative of all hospital medical staffs within a designated region, meets for the purpose of better understanding PSRO activities, identifying their rights in dealing with the PSRO, and developing strategies to negotiate with the PSRO. This informal group, not to be confused with advisory committees required by federal law, offers many advantages:

> *Exerting Greater Leverage:* As a group, physicians have the capability of presenting a strong, unified position to the PSRO. With the financial constraints imposed upon PSRO's, the need for cooperation from medical staffs is considerably magnified. PSRO's must be guided to the realization that collective support from medical staffs is essential for them to produce results to the satisfaction of the Department of HHS.
>
> *Pooling Information and Experiences:* Communicating with the PSRO as a group greatly reduces the possibility of several medical staffs receiving different information and making different interpretations of PSRO activities. Accountability is enhanced when the PSRO must deal with medical staffs as a group, rather than on an individual basis.
>
> *Determining Strategies for Negotiating:* As a group, medical staffs have more range, experience and knowledge for decision making as to how they wish to interact and work with the PSRO. They can focus on the overview and long range implications of PSRO activities, in addition to dealing with those details of immediate concern. Medical staffs also have a wider range of contact with the physician members of the PSRO board and committees throughout their region.

Having identified some of the advantages of an advisory group, it is necessary to determine how such a group works.

### Establishing an Advisory Group

**Obtain Representation From All Medical Staffs:** It is important that as many medical staffs as possible in the region be represented in the group. If not, the group's position cannot be as strongly communicated, and the PSRO may receive confusing messages as to the concerns.

**Meet Regularly and Distribute Minutes:** The advisory group should maintain and distribute minutes of each meeting to all medical staffs in the region, whether or not they all attend. Distribution of a record of the group's work is helpful in maintaining a consistent and clear understanding among medical staffs as to their position relative to PSRO activities.

**Be Aware of PSRO Requirements and Activities:** The advisory group should obtain all relevant information from federal PSRO regulations and transmittals. This information can be obtained through the local PSRO, or if necessary, from the state hospital or medical association. Beyond PSRO documentation,

---

JAMES M. SAVAGE, Vice President Edward W. Sparrow Hospital Association, Lansing, Michigan.

however, it is important to obtain first-hand information on what the PSRO staff, board of directors, and various committees are doing. Medical staffs may wish to request copies of the PSRO board and committee minutes, as well as major correspondence.

The most effective means for communication with the PSRO, however, is for the advisory group to invite the PSRO board officers or executive director to certain advisory group meetings.

**Deliberate, Prioritize, and Negotiate:** Once aware of PSRO activities, medical staffs need to collectively discuss and determine their concerns relative to acceptance or implementation of PSRO directives. In order to negotiate effectively with the PSRO, only those matters of the greatest concern should be addressed. Areas of lesser concern should be processed through a less formal mechanism.

**Identify the PSRO Board and Committees:** Before negotiating with the PSRO board or committees, the advisory group must first be aware of the members of the respective body whom they are planning to address. An updated roster of all PSRO board and committee members should be acquired and distributed to all advisory committee members. These members are hospital medical staff physicians and each will probably be known by at least one advisory group member.

Some communication channels will be more effective than others, so all board and committee members must be reached in order for communication to be effective. These physician members of the PSRO board and committees are the only individuals with PSRO voting rights. Establishing and maintaining rapport with these individuals is essential.

**Lobby:** Once the PSRO board and committee members have been identified and assigned to advisory group representatives, the position of the advisory group can then be communicated on a one-to-one basis. The objective is that the message of the group be clearly translated in a language that the physician member will understand and accept.

**Seek Membership on the PSRO Board and Committees:** The most effective way an advisory group can have effective input into PSRO policy-making is for its physician representatives to serve as PSRO board or committee members. It is important to contact the local PSRO to find out how a physician can become a PSRO board or committee member. PSRO board members are elected by the physicians who are members of that PSRO. Only members have a vote. Membership on various PSRO committees may come from election or appointment. Internal involvement is the single most effective way to effect change, and PSRO board and committee membership is the best way to accomplish this objective.

## Issues and Applications

Once the advisory group is negotiating with the PSRO, the issues and problems to be addressed by this group are numerous. As the PSRO requirements increase, so too will the challenges.

**Financial Reimbursement:** Most medical staffs need to have a basic understanding of the PSRO reimbursement system for utilization review and medical care evaluation functions. Medical staffs should be aware of the amount of PSRO funds budgeted for delegated activities such as physician reviewer reimbursement, and medical care evaluation reimbursement. With PSRO budgets being cut back, it is important to know the amount of funds that will be available for physician reviewers and medical audit activities before guaranteeing any participating medical staff member's reimbursement. In addition, for geographical areas where physicians are members of more than one hospital's medical staff, those area medical staffs may want to be consistent in their approach to reimbursement.

**Medical Criteria Development:** The PSRO has the prerogative to determine the criteria by which utilization review activities will be performed. This could be American Medical Association criteria with length of stay norms, Interqual's severity of illness/intensity of service criteria, or one of several others. Utilization review physicians have the experience and knowledge to determine if the criteria work or don't work, or where areas need to be modified or corrected in order to make such criteria work effectively. If the PSRO-approved criteria are not entirely workable, the advisory group must advise PSRO of the problem as well as possible solutions.

**Confidentiality and Release of Data:** Medical staffs should be aware of the implications of the release of confidential patient-and physician-information to the PSRO. In addition to contracting with hospitals and the state Medicaid agency, PSROs also maintain working agreements with other organizations, including health systems agencies and end-stage renal disease networks. These agreements specify what patient-and physician-information is accessible to the respective organizations, and medical staffs may need to have input into these agreements in order to assure that the patients' and physicians' privacy is protected.

**Medical Care Evaluation Studies:** PSROs have been officially notified by the Joint Commission on Accreditation of Hospitals that numerical requirements for medical care evaluation studies, or audits, have been eliminated, thereby leaving determination of such requirements to the discretion of the PSRO. Future PSRO requirements may place greater emphasis on area-wide audits for inpatient as well as outpatient services, with lesser attention directed towards hospital-specific studies. Medical staffs, as a group, should be aware of and involved in determining appropriate audit requirements.

**Review of Ambulatory Care Services:** Within two years after it becomes fully operational, a PSRO will be required to review ambulatory care services if found capable of performing such review. The Secretary of HHS can permit a PSRO to undertake such review earlier, if requested. When the PSRO begins planning such activities, the advisory group should have input in developing PSRO review mechanisms, as well as determining areas to be reviewed, that will render fair and representative results.

**PSRO Contracts with Private Corporations:** An increasing number of private corporations are contracting with PSROs to monitor the hospital-stays of their employees and dependents. One survey by the American Association of PSROs showed that nearly 20 percent of the country's operational PSROs had already contracted to conduct such private reviews. More PSROs can be expected to enter into these agreements with private corporations in order to generate sufficient income to augment their shrinking federally budgeted funds. As a group, medical staffs need to have input in the development of these review contracts to assure that such monitoring activities are performed with the proper objectives in mind.

These issues indicate some of the areas that an advisory group may choose to address with its PSRO. For the individual medical staff, the task is awesome. As a group, however, medical staffs can work together to assertively guide the PSRO. Participation in the advisory group or on the PSRO board and committees will enable medical staffs to make PSRO an asset, rather than a liability, in their activities.

---

## Liver Transplant Program Undergoes Reevaluation

The Colorado surgical team that pioneered in liver transplantation beginning in 1963 now reports a setback in the program that brought it to almost a halt for a time for reevaluation.

Thomas E. Starzl, M.D., of the University of Colorado Health Sciences Center, Denver, reports that of the last 23 cases of liver transplantation, only six individuals survived for as long as one year.

Prior to that time the survival rate had been slowly climbing and had reached 50 percent in one previous group of 30 patients, Dr. Starzl says.

In studying the poor survival rate of the latest 23 cases, the surgeons determined that a number of factors were involved. Faulty case selection, technical complications, the use of damaged organs, and complications of suppressing the body's automatic factor of rejecting foreign organs were the main causes of death, Dr. Starzl reports.

A major problem facing the surgical team in liver transplantation is that all of the patients are virtually terminally ill before they are considered for the procedure.

The report appears in the July issue of an American Medical Association specialty journal, Archives of Surgery.

The Colorado group previously had reported on 141 cases of liver transplantation, with continued slow improvement in the one-year survival rate.

Mortality in the new group of 23 patients was early. Within one month, eight died, and between 30 and 90 days there were six more deaths. Three more patients died after 4, 6½ and almost 12 months. A final patient died 386 days after transplantation. Five remained alive from 390 to 612 days and were well at the time of preparing the report last winter.

Three of the recipients were so severely ill that, in retrospect, the attempt at transplantation was futile, Dr. Starzl says. Three others received donor livers that never functioned. It remains difficult to determine in advance whether the donor liver is viable. Various other extreme medical problems caused failures of the procedure.

There is no "artificial liver" to prepare patients for the operation or to tide them over if initial graft function is poor. In heart and kidney transplants, machines are available to fulfill the organ's functions before and during surgery.

As the liver program reopens at the Colorado center, the surgeons are applying the knowledge gained in the reevaluation of the 23 cases in the hope of improving the success ratio in the future.

—*New York State Journal of Medicine,* November 1980

Two convenient dosage forms:
100 mg (white) and 300 mg (peach)
Scored Tablets

Tablets imprinted with brand name to
assist in tablet identification.

Wellcome
**Burroughs Wellcome Co.**
Research Triangle Park
North Carolina 27709

# Study of Health Maintenance Organizations

AMA COUNCIL ON MEDICAL SERVICE

## Introduction

In October 1976, the Board of Trustees of the American Medical Association established the National Commission on the Cost of Medical Care to provide a comprehensive overview of the subject of health care costs and to explore approaches toward solutions in constraining those costs. Among the broad range of topics discussed in the context of escalating health care costs was the subject of health maintenance organization*—their mode of operation and their potential for reduced utilization and cost of care.

The Commission Report in 1977 cited several studies' conclusions on the positive effects of HMOs: lower incidences or hospital utilization; slightly-to-moderately higher rates of physician services utilization; and a generally lower rate of annual health care expenditures. However, all of the delivery modes investigated "were found to have both benefits and deficiencies and no individual method was found to be universally superior for the delivery of health services." The report concluded that since no single mode can meet the preferences of diverse individuals, a true choice of delivery systems is necessary for competition and thus efficiency.

Recommendation No. 3 of the Commission's report, titled "Fair Market Health Plan Competition," indicated a potential by health maintenance organizations for strengthening consumer and provider price consciousness and called for neutral policy and fair market competition between HMOs and other provider and insurance systems. The Board of Trustees of the AMA issued two responses to Recommendation No. 3: approval of the recommendation in principle and further study to be done by the AMA. At its 1978 Annual Convention, the AMA House of Delegates took the following action:

(1) Adopted the following statement: "Approval of the concept of neutral public policy and fair market competition among all systems of health care delivery," and

(2) Referred Recommendation No. 3 to the Board of Trustees, calling for an objective assessment of HMOs, including IPAs and other group arrangements, with respect to their impact on access, quality and cost of health care.

The Board, in turn, requested the Council on Medical Service to make this assessment. Accordingly, in September 1978, the Council initiated an objective study of HMOs through an extensive literature search and a series of site visits. The completed 183-page study, which has been distributed to the House of Delegates, serves as the basis for this report and its recommendations.

## Overview

As this House will recall, the Association, in a number of statements to Congress, opposed the law

---

*For the purposes of this report, a health maintenance organization is defined as an organized system of health care delivery which provides comprehensive health services to voluntarily enrolled members, who pay a periodic, per capita amount which does not fluctuate in relation to the number or extent of services received.

There are three basic organizational models, based on the contractual relationship between the physician and the HMO. Physicians in a *staff model HMO* are direct employees of the HMO. Physicians in a *group model HMO* are members of a partnership or a service corporation, which contracts with the HMO to provide services to members for a predetermined per-member, per-month amount called a capitation.

From this capitation fund, the physicians' group pays its own members, usually in the form of salary plus incentives. Both staff and group physicians deliver care in health centers owned or operated by the HMO.

Although there are many variations of the *Individual Practice Association* (IPA) model, all share some basic characteristics: an IPA is a physicians' organization which provides services to HMO enrollees. The HMO pays the IPA a capitation or per-member amount; the IPA, in turn pays its member physicians, usually on a fee-for-service basis. IPA physicians work in their own offices, where they serve both HMO members and fee-for-service patients.

---

EDITOR'S NOTE: This is a report of the AMA Council on Medical Service to the House of Delegates at its Annual Meeting in July, 1980.

that provided federal funds for planning, development, and promotion of HMOs, since it provided a competitive advantage to one system of health care delivery. This stance was restated only last year in correspondence with the Secretary of HEW concerning notices mailed to Medicare beneficiaries about "Qualified Health Maintenance Organizations" serving their areas. In its letter, the AMA stated that it "does not oppose providing a choice of health care delivery systems to Medicare beneficiaries, nor do we question the need to inform them that such a choice exists. We do, however, insist that such tax-supported information be clear in its presentation of a choice and fair in its non-advocacy of any one of the competing systems."

The Council reiterates its own strong support of the Association's consistent urging of neutral public policy and fair market competition among all systems of health care delivery. While substantial grant and loan programs for HMO development were in fact enacted by Congress and are the law of the land, it should also be noted that approximately half the HMOs now operating in the United States were developed without the use of federal funds. Financed entirely through private sources, these programs do provide a true marketplace test for the HMO concept; many have indeed, through independent private initiative, succeeded in providing care to their members at a saving in costs.

In carrying out its responsibility for monitoring HMOs over the past several years, the Council on Medical Service has been concerned that the cost-savings of HMOs may be the result, at least in part, of a younger, healthier population enrolled in this type of organization, or of extensive reliance on non-physician health care practitioners, underutilization of services, or a tendency of members to seek, and pay for, some of their care outside of the HMO. This study has examined those issues—to the extent that information exists in the literature—and the Council is of the opinion that the impact of some of these factors on HMO cost has not been conclusively determined. Accordingly, the Council believes that these areas of HMO performance should continue to be monitored.

The Council on Medical Service presents this report on health maintenance organizations to the House of Delegates with the belief that it provides useful information about the HMO concept. The Council's assessment of HMO performance with respect to its impact on the costs, quality, and accessibility of health services is summarized on the following pages. As indicated previously, the factual data on which the Council's assessment is based have been provided to the House as an informational supplement to this report.

## Cost of Care in an HMO

Studies conducted throughout the last 25 years indicate that health maintenance organizations are able to provide health care services to their members at a cost, including premium and out-of-pocket expenses, that is lower than that for care provided under the traditional third party reimbursement system. This cost-savings is achieved primarily through a reduction in the number of hospital days; fewer admissions, rather than shorter length-of-stay, is the major reason for the decrease in number of hospital days.

Age breakdowns of the national HMO population and individual HMO membership show a younger enrollment in HMOs than is reflected in the general population, primarily due to the small number of Medicare beneficiaries enrolled. (The AMA site visit study shows a higher percentage of enrollees in the 15-44 age group and a lower percentage in the over 65-group compared to the general population.) At the same time, the Council notes that the age of the HMO population does not differ significantly from the age of other employer group-insured populations. In addition, studies comparing the health status of people who choose HMO membership and those who elect to remain in the traditional insurance program reveal no significant differences.

Studies reported in the literature up to 1969 indicate that significant amounts of out-of-plan utilization existed—from 33% to 39% at the high end of the range. Studies after 1969 show smaller amounts of out-of-plan utilization, with a range from less than 1% up to 11%. New HMO members have higher out-of-plan utilization than members of longer tenure, with Medicare beneficiaries having a greater incidence than any other segment of HMO membership.

Although most HMO analysts agree that cost-savings are achieved primarily by substituting ambulatory care for hospitalization, it is extremely difficult to prioritize the other factors—or combination of factors—that account for HMO lower costs. Evidence does exist indicating that HMOs are often able to negotiate for better prices for units of service such as hospital charges and referral fees. However, the Council was not able to find sufficient documentation as to the exact impact on costs of such factors as peer influence, prospective budgeting, financial incentives such as year-end bonuses to member physicians, utilization review programs, medical leadership, and the impact of competing prepaid plans in the same community—although all are believed to contribute in some measure to controlling costs.

From 1975 to the first quarter of 1980, six of the 108 federally qualified HMOs failed because of financial instability. Also, during the three year period from 1975 through 1978, 51 prepaid health plans were closed in California following an investigation by the Office of the California State Auditor General. That office reported that only about 48% of the state payments to these plans was used for health care services.

The amount of money needed to establish and underwrite initial operations of a new HMO is considerable, and the federal government policy of HMO promotion makes available a large pool of developmental funds. Federal funding in the form of development *grants* subsidizes that portion of a new HMO's budget attributable to fixed, administrative costs. Federal *loans* represent a specially provided source of funds which are repaid at the rate of interest used for long-term federal financing.

The rate of interest applied to HMO operating loans is based on the average market yield for outstanding 20-year marketable obligations of the United States. This U.S. Treasury rate, used for a large number of federal funding programs, does not fluctuate as widely as the prime rate. During the period 1975-78, HMO interest rates were higher than the prime rate, ranging from 7.5% to 8.5%, compared to a range for the prime rate of from 6.25% to 8.0%. Since 1978, the HMO interest rate has been generally lower than the prime rate. HMO rates ranged from 7.75% to 8.5% in 1978, compared with a prime rate range of 7.75% to 9.75%. For 1979, the ranges were 8.75% to 10% (HMO) and 11.5% to 15.25% (prime). While the federal government has been the major source of capital in the last five years, there is reason to expect more private funding in the future.

### Quality of Care in an HMO

The definition of "quality" is elusive in any delivery system, but the word is particularly difficult to define in an ambulatory setting such as a health maintenance organization. The lack of consensus on a definition of quality, on assessment techniques and on the structure and expectations of the review process has left all ambulatory settings, including HMOs, open to criticisms of inadequate quality assurance review; however, this same lack of consensus has allowed freedom to innovate and experiment. In addition, measuring the quality of care in HMOs is in some respects less difficult than in other ambulatory settings, as HMOs have the advantage of a large, well defined population with available, accessible medical records with at least minimum degrees of consistency.

Based on its review of the literature on this subject, the Council believes that the quality assurance studies reported may not be representative of all HMOs, as the studies so far have concentrated on the larger prepaid group practices and leave much unstudied in the IPA mode of delivery. Most research has been conducted in HMOs in large metropolitan centers in California, New York and the District of Columbia. Furthermore, most of the HMO literature reflects the performance of older, more established prepaid group practices and, therefore, is not representative of the newer HMOs.

The most recent review of primary articles on the quality of care in HMOs was done at Johns Hopkins University in 1979. This review analyzes 25 studies which compared the quality of care received by an HMO population to a comparable fee-for-service population. The review concluded that the medical care delivered by health maintenance organizations was of a high quality. Because of such limitations as the number and variety of criteria used and the inapplicability of the findings to all HMOs, it is generally acnkowledged that the findings of this review cannot be considered the final word—and the Council believes such a qualification is appropriate. Analysts do agree, however, that the studies in this review were as good and as relevant to quality assessment as any reported in the literature to date.

The HMO law provides broad authorities for establishing quality assurance program requirements and for monitoring HMO activities. Quality assurance regulations for qualified HMOs, published by DHEW in July 1979, require that each qualified HMO have an ongoing quality assurance program which: 1) stresses health outcome; 2) provides review by physicians and health professionals of the process of health care delivery; 3) utilizes a data collection, analysis and feedback system; and 4) meets the standards established for Professional Standards Review Organizations. A quality assurance program for HMOs developed by the DHEW Office of HMOs to implement these regulations recommends a two-part system: 1) an external, independent assessment of quality; and 2) an internal program designed to examine specific problems associated with the quality of services.

As might be expected, HMO quality assurance and utilization review programs are at varying stages of planning and implementation. Developing HMOs concentrate their initial efforts on designing their health care delivery system and recruiting providers and members. Once the HMO becomes operational, more emphasis is placed on assuring the quality of services rendered. On the ambulatory care side, the HMO quality assurance activity is generally process-oriented, with review of selected medical charts and utilization profiles; many IPAs have integrated the review of ambulatory care with the processing of claims for reimbursement. Most HMOs depend primarily on the quality assurance system(s) of their affiliated hospital(s) for inpatient review, with emphasis on monitoring the appropriateness of admissions and length of stay. As in most health care settings, quality assurance programs in HMOs generally focus on the users of health services rather than non-users, and are thus more oriented toward identification of overutilization of health services rather than underutilization.

Several new types of health care practitioners have emerged over the past few years in the delivery of primary care. Among these, physician's assistants and nurse practitioners appear to be playing a significant role in HMOs, and some concern has been expressed as to their impact on quality. Studies have been conducted in which care given by PA/NPs was directly compared with that given by physicians. However, research techniques have not been sensitive enough to detect clinically important differences in the manner in which care is provided nor to determine whether all types of PA/NPs give care of equivalent quality.

The name "health maintenance organizations" implies that this type of health care delivery system places a relative emphasis on providing preventive care. Recently, however, this perception has been questioned. Findings from studies comparing preventive use in prepaid and fee-for-service settings are in conflict: some research suggests that prepaid systems deliver more preventive care than comparable fee-for-service settings, but other studies indicate mixed or insignificant differences or even lower rates of preventive care in prepaid systems.

Another general indication of the quality of care is the attitudes expressed by patients, recognizing that such attitudes are influenced by many factors other than technical excellence. The consensus is that patients are generally satisfied with the care they receive regardless of the health care delivery setting. However, HMO members do complain about the impersonality of the doctor/patient relationship in an HMO setting. Studies evidence a kind of "psychological trade off" between tolerating an unsatisfactory doctor/patient relationship in return for cost-savings and perceived high level of technical expertise. Most of the HMOs surveyed by the AMA believed that the formal complaint systems built into their HMO structures give their members an opportunity of articulating these complaints and thus contribute to the early resolution of their grievances.

As a part of its overall study, the Council also attempted to review the malpractice experience of HMOs, as a possible indication of patient satisfaction with care in these settings. However, this subject has not been investigated in any depth and requires further study.

### Accessibility of Care in an HMO

Some problems of access to health services in general can be resolved by the structure of the HMO. In theory, the HMO can provide a continuous and coordinated source of care for its members. The HMO member's first point of contact is a primary care physician or an allied primary care provider, such as a nurse practitioner or physician's assistant. Ideally each HMO member is urged to develop a continuous relationship with one doctor, a primary care physician who coordinates any necessary referrals to specialists. However, HMOs have not been entirely successful in ensuring that each member selects a personal physician and maintains the continuity of the relationship.

Some HMOs have been able to reduce inappropriate use of the hospital emergency room by encouraging regularly-scheduled ambulatory visits to the HMO facility and by providing 24-hour access to urgent care treatment. This after-hours service usually consists of a telephone system staffed by HMO physicians, with calls sometimes screened by nurse practitioners or physician's assistants. If the member's condition is perceived to require more than telephone advice from the person on-call, treatment is administered either in the HMO facility or by referral to a hospital emergency room.

Financial impediments to receiving care are reduced through HMO coverage of ambulatory care and preventive services, as well as through reduction or elimination of patient copayments and deductibles. HMO coverage as a rule does not require patient deductibles before coverage begins. And, while some HMOs may impose a minimal copayment for specific services, the amount of such copayments in federally qualified HMOs is limited by federal regulation.

While HMOs resolve some access problems, they create others by virtue of their organizational structure. For example, not everyone is eligible for membership. Most HMOs do not have a contract to enroll Medicare and Medicaid beneficiaries. HMOs that do not have a membership of 50,000 are not required to conduct "open enrollments." Therefore, those who are self-employed, retired, unemployed or employed on a part-time basis may be eligible to enroll only if they pass a health screening questionnaire.

The location of the HMO may create additional access problems. Currently most HMOs are located in large metropolitan areas concentrated primarily on both coasts and in the Great Lakes region. With those metropolitan areas, the location of the HMO often means that a large segment of the area population has a long period of travel time to reach the facility. Also, the geographic distribution of HMOs across the country makes them inaccessible to more than half of the United States population.

Although HMO members express greater dissatisfaction about availability of appointments, recent research seems to indicate no distinguishable difference in waiting time for an appointment between prepaid systems and fee-for-service practice.

### Response to Resolution 17 (I-79)

In the final stages of its consideration of this report, the Council on Medical Service also received Resolution 17 (I-79) on "Importance of Direct Access to Primary Physician," which suggested that "organized medicine publicly and strongly emphasize the potential adverse effects of health financing and delivery systems which do not provide continuity of personal care or an adequate physician-patient ratio." This resolution was referred to the Board of Trustees by the House because this report was under development; the Council agrees with its thrust and has incorporated it, in a positive form, as Recommendation 3 below.

### Recommendations

Based on its study of HMOs, the Council on Medical

Service recommends:

(1) That approval of the concept of neutral public policy and fair market competition among all systems of health care delivery continue to be AMA policy, with the potential growth of HMOs being determined not by federal subsidy, preferential federal regulations, and federal advertising promotion, but by the number of people who prefer this mode of delivery;

(2) That the AMA continue to recognize that no single pattern of health care delivery is necessarily suited to all patients or to all physicians, and that the presence of multiple alternative delivery systems will enable both patients and physicians to exercise a true choice;

(3) That the AMA continue to express its concern that high standards of quality, adequate physician-patient ratios, and continuity of personal care be maintained in all modes and systems of health care delivery;

*(4) That the HMO approach to health care delivery be recognized as one which may result in care for enrollees at a lower total cost than for comparable groups in other health care delivery systems, whether the group, staff or IPA model HMO is considered;

(5) That individual physicians and groups of physicians become better informed about the pros and cons of establishing or participating in an HMO if interest in this form of health care delivery is present in their community;

(6) That the AMA continue to provide information to medical societies and physicians concerning HMOs;

(7) That the AMA encourage research in those areas of HMO performance which have been identified as needing further study; for example, whether factors leading to apparent HMO cost-effectiveness are unique to the HMO pattern or whether they may be applicable to other forms of practice; and

(8) That this report be adopted as meeting the request of this House for an objective assessment of HMOs, and in lieu of Resolution 17 (I-79).

---

*Referred to the Board of Trustees for further study and report. The House of Delegates was not convinced that this conclusion was valid from the statistics presented in the study.

AYR INSURANCE AGENCY

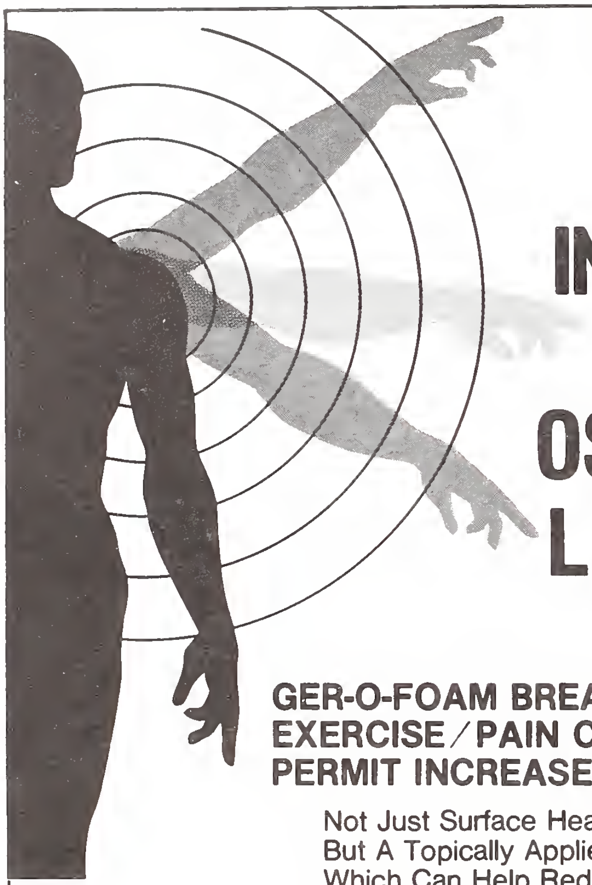
ALLENBY H. AYR ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947



# IN RHEUMATOID and OSTEOARTHRITIS LOW BACK PAIN

**GER-O-FOAM BREAKS THE EXERCISE/PAIN CYCLE TO PERMIT INCREASED RANGE OF MOTION**

Not Just Surface Heat (a counterirritant)
But A Topically Applied Anesthetic/Analgesic
Which Can Help Reduce Minor Pain And Thus
The Need For Oral Medication.

When massaged into the skin, Ger-O-Foam's unique formula can alleviate pain around the joints affected by rheumatoid arthritis or osteoarthritis...thus possibly permitting functional exercises otherwise impossible to perform.

**"It was difficult to ignore the pain-relieving efficacy of massage with topical analgesic [GER-O-FOAM]"**[1]

Ger-O-Foam's surface analgesic-anesthetic foam relieves low back pain and minor joint pains fast...and lasts for long periods of time.

PRECAUTIONS: Do not use in or near eyes, on open wounds or mucous membranes. Discontinue if excessive irritation of the skin develops.

AVAILABLE: 4oz. cans. Approximately 125 applications in each can.

[1] Gordon, E.E. and Haas, A., Indust. Med. & Surg. 28:217, 1959

**AVAILABLE ONLY THROUGH THE PROFESSIONS**

NEW
IMPROVED
FORMULA

## GER-O-FOAM™

**AEROSOL FOAM FOR MASSAGE**

methylsalicylate 30% and benzocaine 3% in a specially processed oil emulsion

**GERIATRIC PHARMACEUTICAL CORP.**
397 Jericho Turnpike
Floral Park, N.Y. 11001
Pioneers in Geriatric Research

DEVELOPERS AND SUPPLIERS OF CEVI-BID • GAYSAL • B-C-BID

# Month in Washington

The Reagan Administration formally took over the reins of office with high hopes for ameliorating the nation's problems at home and abroad but with no illusions that the job will be easy. The new Congress, its ranks swelled with conservatives, met for the first time with its leaders pledging their best efforts to help Reagan carry out his legislative programs.

One of the first orders of business was confirmation of Reagan's cabinet appointments, including that of former Sen. Richard Schweiker (R.,Pa.) to be Secretary of the Health and Human Services (HHS) Department.

Congress faces a heavy agenda on health.

Whether national health insurance will be seriously considered depends whether the Reagan Administration chooses to push some plan such as "pro-competition" or catastrophic, both of which were cited favorably during the campaign.

Administration plans to deregulate aspects of health, to make economies, and possibly to eliminate some programs appear to be in the works.

Many major health programs are due to expire in the new two years and must be re-authorized by Congress. This affords the Administration a timely opportunity to request major changes in them.

The list of programs requiring congressional action includes Health Services Research, Statistics and Technology; Grants to States for Health Services; Primary Health Centers; Natonal Health Service Corps; Home Health Services; Primary Care Research and Demonstration Projects; Medical Libraries; National Research Institutes; Health Research and Teaching Facilities and Training of Professional Health Personnel; Student Assistance; Capitation Grants to Schools of Medicine, etc.; Nurse Training; Family Planning; Genetic Diseases; Sudden Infant Death Syndrome; Hemophilia; Health Maintenance Organizations; Health Planning; Health Resources Development; Health Information and Health Promotion; President's Commission on Ethics and Research; Developmental Disabilities Protection and Alcohol and Drug Abuse Programs.

The last Congress failed to act on important bills that carry over into the new session. The HHS Department appropriations measure and aid-for-medical-education are the two major bills in this category. The Child Health Assurance bill, a priority of the Carter Administration, may be put on the shelf in the new Congress, though there is still substantial support. The Hospital Cost Containment bill is beyond salvage.

The medical education bill may face rough scrutiny. Both House and Senate last year approved measures reducing capitation aid for medical schools, but they could not agree on specifics.

Health Maintenance Organizations are worried that their allotments from the government will be pared. The National Health Service Corps comes under a HHS Secretary in Schweiker who has been very critical of its growth. The Health Planning bill awaits formidable conservative opposition.

The new membership of the two major Senate health committees was formed. The Republicans hold a two-seat edge on both groups—Senate Finance and Senate Labor and Human Resources.

Sen. Edward Kennedy (D.,Mass.) chose to become the ranking minority member of the Human Resources Committee rather than of the Senate Judiciary Committee, giving Kennedy a forum from which to lead the opposition on health affairs. Sen. Harrison Williams (D., N.J.), former chairman of the committee, chose to be the top Democrat on another committee.

Here is the membership of the two committees that guide most health legislation in the Senate:

Senate Finance

| *Republicans* | *Democrats* |
|---|---|
| Robert Dole (Kans.) | Russell Long (La.) |
| Bob Packwood (Ore.) | Harry Byrd (Va.) |
| William Roth (Dela.) | Lloyd Bentsen (Texas) |
| John Danforth (Mo.) | Spark Matsunaga (Hawaii) |
| John Chafee (R.I.) | Daniel Moynihan (N.Y.) |
| John Heinz (Pa.) | Max Baucus (Mont.) |
| Malcolm Wallop (Wyo.) | David Boren (Okla.) |
| David Durenberger (Minn.) | Bill Bradley (N.J.) |
| William Armstrong (Colo.) | George Mitchell (Maine) |
| Steven Symms (Idaho) | |
| Charles Grassley (Iowa) | |

Senate Labor and Human Resources

| *Republicans* | *Democrats* |
|---|---|
| Orrin Hatch (Utah) | Edward Kennedy (Mass.) |
| Robert Stafford (Vt.) | Harrison Williams (N.J.) |
| Gordon Humphrey (N.H.) | Jennings Randolph (W.Va.) |
| Dan Quayle (Ind.) | Claiborne Pell (R.I.) |
| Don Nickles (Okla.) | Thomas Eagleton (Mo.) |
| Jeremiah Denton (Ala.) | Donald Riegle (Mich.) |
| Paula Hawkins (Fla.) | Howard Metzenbaum (Ohio) |
| Lowell Weicker (Conn.) | |
| John East (N.C.) | |

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

On the House side, Rep. Dan Rostenkowski (D., Ill.) assumes the chairmanship of the House Ways and Means Committee in the next Congress rather than take a leadership Whip post. Present chairman Al Ullman (D., Ore.) was defeated for reelection.

****

The nomination of former Sen. Richard Schweiker (R., Pa.) to be Secretary of Health and Human Services (HHS) brings to the post a man widely versed in health affairs.

The 54-year-old Schweiker, who had announced last year that he would not seek re-election to the Senate, was the front runner from the start in speculation about the HHS post. Schweiker has been a close friend of Reagan's since he agreed to be his vice presidential running mate in event Reagan had captured the GOP nomination four years ago.

As ranking Republican member on the Senate Labor and Human Resources Committee and on its Health subcommittee, Schweiker has an extensive knowledge of health legislation and of the Federal health structure.

Schweiker has expressed strong convictions about certain aspects of health, notably reservations about the extent of aid for medical education and for the National Health Services Corp.

In an interview last summer, Schweiker said a Reagan Administration will not endorse national health insurance or hospital cost containment and will move to "deregulate."

Schweiker is the author of a "pro-competition" plan that would eliminate most of the present tax deductions for private health insurance in an effort to encourage more cost-consciousness by business and consumers.

"You certainly will see a stop to the rush to federalize things," Schweiker said. But he cautioned that reversing the trend will take time. "There is so much momentum that it will take acts of Congress to repeal some programs," he said.

Federal involvement in health has not produced solutions to the nation's health problems, he said. "We are cautious and skeptical about involving the government further. In fact, we are looking at ways to disinvolve the government."

The senator said Health Maintenance Organizations should have their "full day in the sun," but "we should not build upon a system that favors one mode of competition over another."

As for medical schools, he said "we must give them protection if we step on the brakes. We can't leave the institutions high and dry."

Schweiker said the organizational structure at HHS is haphazard and suggested there would be moves to get the "health components working together."

Commenting on the National Health Service Corps, Schweiker said "federal support on the current scale will slow permanent solutions to physician maldistribution."

****

The nominations of Schweiker to be HHS Secretary and of former Rep. Dave Stockman (R., Mich.) to be Director of the Office of Managment and Budget brought to the cabinet two proponents of the so-called "pro-competition" health plan.

"Pro-competition" measures remove the current federal tax subsidy for purchase of private health insurance. People would receive tax-free rebates when they choose plans costing less than a set amount of premiums. High deductibles and co-insurance are encouraged. Most such bills before Congress include a catastrophic benefit as a requirement for private insurors. The intent is to foster competition among insurors to produce innovation and efficiency and to reduce waste. Much of the present regulatory apparatus would be stripped away, including Professional Standards Review Organizations (PSRO's) and health planning.

One of the major bills before the house was sponsored by Stockman and Rep. Richard Gephardt (D., Mo.). Sen. David Durenberger (R.,Minn.), who may be chairman of the Senate Finance Subcommittee on Health, is a pro-competition backer.

****

The HHS Department is anticipating changes with the new Administration. The agency foresees wide organizational shifts. The Reagan team has been considering proposals to bring education back into the agency, undoing the brand new Education Department that was created by President Carter. Significant changes appear inevitable at the Health Care Financing Administration (HCFA) which runs Medicare and Medicaid. There is sentiment for creation of a cabinet-level Health Department. A stronger policy role is in the works for the Public Health Service (PHS).

Former HHS Secretary Patricia Harris proposed a new structure consisting of two HHS Under Secretaries, one for health, the other for Social Security. This would help solve problems created by the present awkward arrangement under which HCFA, controlling the two largest federal health programs, is separate from the Public Health Service. Harris proposes that HCFA report to the Health Under Secretary.

****

Scores of changes were made in the Medicare and Medicaid programs as a result of the passage of the Budget "Reconciliation" bill late in the Congressional "lame duck" session.

Most of the controversial provisions affecting the medical profession were dropped from the bill as were the sweeping changes in hospital reimbursement that had been approved by the Senate.

# The President's Page

Recent unfavorable headlines and exposés of long term care facilities must be distressing to all of us as physicians. Much of the criticism has been leveled at poor housekeeping and inadequate food services, nursing neglect, fraudulent claims and even thefts by management of patient funds. A few investigations have involved physicians directly, most reflect on us as part of the health care system.

The small converted nursing home of the recent past with close liaison between owner, patient, family and physician has been replaced by large impersonal institutions with greatly increased costs. Owners are frequently businessmen having no personal involvement with the patient. Too many patients have no family or concerned relatives. Prolonged institutionalization frequently exhausts private funds and many chronically ill must become dependent on Medicaid. Medicaid and Welfare financing is not adequate for good institutional or medical care. Responsibility of owners, nurses, families, social workers, physicians, etc., are too often poorly defined. The major problem is, as usual, financial. As the numbers of elderly increase, financing will become more difficult. Finding solutions to the diseases of the elderly, principally arteriosclerosis, cancer and senility, will reduce the problem but not in the near future.

In spite of the trend toward depersonalized institutionalization, most chronic care facilities have excellent nursing care, adequate laboratory and portable x-ray services, physio- and occupational therapy, social workers and other ancillary services needed to provide quality care.

Aware of the need for better performance by medical staffs, the State has mandated some procedures which we, as physicians, should have inaugurated on our own some time ago. Regulations require regular staff meetings (a sham at present and largely ineffective). Staff bylaws have been proposed. Patients must be visited at least once each month. Numerous regulations deal with writing of orders, nursing procedures, lab tests, etc. Some of these are of value and some merely a nuisance.

The success the medical profession has had in improving the quality of hospital care through the accreditation process and the functioning of strong medical staffs should be carried over in an appropriate degree into these new types of institutions. Most of us are already overloaded with committee meetings. However, physician participation and strong staff meetings are the best means by which we can improve and maintain the quality of care for our patients in chronic care facilities. Physicians must insist that there be formal bylaws established by the professional staff; that privileges be approved by the staff at regular intervals after review of quality of care; the staff should elect its officers to be independent of the medical director and the ownership; regular meetings of the staff should be attended by all physicians involved in the care of patients in the institution; the staff should participate in CME for physician members as well as for the nursing and ancillary staff and be advisory to the owners in all areas of patient care.

Building such an independent physician organization is an effective means of improving institutional care, but it is not a panacea. There are other ways in which we, as physicians and as a Society, can help to improve the quality of chronic care. More physicians should continue to care for their patients through chronic illnesses, and families should be more selective in deciding who will care for the confined patient. The ridiculously low Medicaid payments for medical care need correction and, most importantly, each physician must be as devoted to the care of the chronically ill elderly as to other patients. Time devoted to assuring quality care for the chronically ill may be somewhat onerous, and often requires some financial sacrifice, but the alternative is further blackening of our public image, further regulation and control of our practices and, most importantly, more unacceptable breakdowns in the care of the chronically ill.

W. Raymond James, M.D.
*President*

## THE COLLEGE OF PHYSICIANS & SURGEONS OF COLUMBIA UNIVERSITY

### Postgraduate medicine courses for Spring, 1981:

*Postgraduate Review Course in Functional Neuroanatomy and Neurophysiology,* January 10-April 4, 1981 (13 Saturdays, 9:30 - Noon). Fee: $260; Resident's fee: $130. (26 credit hours). Edgar M. Housepian, M.D.

*Ophthalmology Saturday Continuing Medical Education Program,* Five Saturdays, 9 am - 4:30 pm: *A. Dec. 6, 1980: What Every Physician Should Know About Eye Disease; B. Jan. 10, 1981: Cornea and External Disease; C. Feb. 7, 1981: Ocular and Adnexal Trauma; D. Mar. 7, 1981: Ocular Therapeutics* and *E. April 4, 1981: Topics in Pediatric Ophthalmology.* Fee: $85; Resident's fee: $20. (7 credit hours per session). R. Linsy Farris, M.D.

*Internal Medicine Review Course,* January 5-June 22, 1981 (25 Mondays, 5:30 - 7:30 pm). Fee: $300; Resident's Fee: $150. (50 credit hours). Department of Medicine.

*Hypnosis and Psychiatry,* March 23-26, 1981 (Monday-Thursday). Fee: $400; Resident's fee: $300 (includes workshops and lunches). (32 credit hours). Herbert Spiegel, M.D.

*Specialty Pathology of the Head and Neck,* March 30-April 3, 1981 (Monday-Friday): *March 30: Skin; March 31: Oral Cavity; April 1: Nerve and Muscle; April 2: Neoplasia of Central Nervous System and Eye; April 3: Demyelinating, Metabolic, and Degenerative Diseases of the Central Nervous System.* Fee: $400 or $100 each day; residents: $200 or $50 each day. (fee includes syllabus and luncheons). (30 credit hours). Donald W. King, M.D.

*Cutaneous Vulvar and Vaginal Diseases,* May 14-16, 1981 (Thursday-Saturday). Fee: $375; Resident's Fee: $175 (includes syllabus and lunches). (18 credit hours, 18 cognates by A.C.O.G., and 18 Prescribed Hours from the A.A.F.P.). Alex W. Young, M.D. and Harold M.M. Tovell, M.D.

*Current Concepts in Liver Pathology, Second Annual Course, Histopathology Slide Seminar and Short Course.* May 22-23, 1981 (Friday-Saturday). Fee: $225; Resident's fee: $120 (fee includes syllabus, set of 60 Kodachrome slides and luncheons). (13 credit hours). Jay Lefkowitch, M.D.

*Experimental Therapeutics of Movement Disorders.* May 26-27, 1981 (Tuesday-Wednesday). *CALL FOR PAPERS:* Papers are now being accepted for this symposium. The deadline for submission of abstracts is February 27, 1981. Regarding submission of papers, contact: Dr. Stanley Fahn, Neurological Institute, 710 168th Street, New York, N.Y. 10032. Fee: $200; Residents: $100 (fee includes a syllabus and lunches). (14 credit hours). Stanley Fahn, M.D.

*The Growing Child: Common Problems in Growth and Development:* May 27-29, 1981 (Wednesday-Friday). Fee: $200; Resident's fee: $100 (includes lunches and syllabus). (18 credit hours). Drs. Michael Katz and Stephen J. Atwood.

---

Names of Course Directors follow each listing. All courses approved for Category 1 credit of the A.M.A.'s P.R.A. Contact: DR. ELIZABETH C. GERST, Continuing Education Center, P&S, 630 W. 168th St., N.Y., N.Y. 10032; telephone: (212) 694-3682.

# Reflections from the Dean's Office

## Nothing but Problem Solving?

ROBERT U. MASSEY, M.D.

The phrase, "problem solving skills," is now fixed in the jargon of education; to develop whatever is meant by those skills is the goal—perhaps the only goal—of education. Muller wrote of higher skilling in contrast to higher education.[1] Learning to cope, to "handle data," and to deal with the real world represents enlightenment as opposed to the mere accumulation of facts, which are then "regurgitated" on examinations, now often called "evaluation instruments."

I watched a squirrel from our kitchen window attempt to solve the problem of getting into a bird-feeder. He surveyed it from the ground and from a nearby low roof; he tested the supporting wire with a forepaw. His sense of his own range was sure, and with a single skillfully executed leap he solved his problem. He did all of this without knowing the geometry of triangles or the laws of falling bodies. He had only the skill which he had picked up by innumerable feats of acrobatics executed between tree limbs and trunks, combined with whatever preformed patterns in his nervous system he may have inherited from his ancestors. He could not have done it better had he known Newton's law of universal gravitation; if that is a fact, he did not need to recall it.

Facts such as formulae, dates, and irregular verbs may be in trouble. No educator would deny that being able to recall some memorized information may from time to time be useful for solving problems; but for us to go on cluttering our minds with numbers, patterns, and explanations when we could as easily look them up is, some of them say, a bad way to learn.

Perhaps they are right, but if life is only a mass of problems to be solved, and if the practice of medicine is no more than doing a long exercise in story problems, those who remember Starling's *Law of the Heart,* and the elegant curve used to express it, may have cluttered their heads in vain. To go on from that recollection, to reflect that such laws are subjective, only good so far as they go, and that no explanation is entirely true (Otto Frank improved on Starling's explanation) is loitering about in our minds, and does not help us at all to get on with solving the problems of the patient with shortness of breath.

The distinction between practical and theoretical knowledge was made long ago; I recall one or two of our family acquaintances whom my father called educated fools. On the other hand, we all can remember some skillful problem solvers who, when their tasks were neatly done, seemed to have nothing more in their heads. Educators make a fine distinction between education and training: people are educated, animals are trained. In the air force, however, pilot training is what takes place as the student pilot learns from his instructor how to handle his craft, and is generally carried out in a trainer. What he learned about the airplane and the theory of flight, before he put his hands to the controls, was more like education. The plane's designer, whose education in aeronautical engineering was of a high order, might never become a pilot as skillful as the student trainee. I suspect that the best pilots and the best designers have been both skilled and educated.

Those who see all of living as problem solving are somehow like those who believe that all of our experience may be reduced to the laws of physical science: our intuition says they are wrong, but we cannot prove it.

There is an old phrase which refers to the furniture of the mind, and which implies that general education has something to do with providing that furniture. It is an attractive analogy: rooms may be elegantly furnished or tastelessly cluttered; they may be spare and uninteresting or rich and inviting; they may be neat or messy. We each furnish our rooms and our minds after our own taste, which may be to pay no attention to either. Education, I suspect, has something to do with both. If our teaching is only training, and its only goal is to impart problem solving skills, the rooms of our students' minds may turn out to be orderly, but they will surely incline to drabness. A patient of mine once described his bedroom at home as suicidal; his mind, it seemed to me, was a reflection of it.

REFERENCES

1. Muller S: Higher Education or Higher Skilling. Daedalus, Fall, 1974, pp. 148-158.

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# Have you considered participation, Doctor?

YOU SHOULD KNOW THAT:

- The maximum allowances in the Century Contract Comprehensive Schedule of Services have been increased twice in the last 10 months. **The increases, in the aggregate, amounted to 35.8%.**
- It is the goal of Blue Cross and Blue Shield to update the Century Contract schedule on an annual basis.
- Participating Providers receive prompt payment for covered services directly from Blue Cross and Blue Shield.
- Participation can reduce receivables and eliminate the need to bill patients in many instances.
- Over one million Connecticut citizens are Century Contract members for whom claims totaling $68.4 million were paid in 1979.
- Your patients that are Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Physician, please write or call:

Write:
Blue Cross & Blue Shield of Connecticut
Professional Relations
Box 1930
New Haven, CT 06509
Call:
New Haven area: 777-4481
Toll free: 1-800-922-1742

**Blue Cross**
**Blue Shield**
of Connecticut

® Reg Mark Blue Cross Assn
®' Reg Mark Blue Shield Assn.

Connecticut Medicine
*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*
Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
Florence Keller, *Woodbridge*
James D. Kenney, *New Haven*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*
Norman A. Zlotsky, *Rockville*

# EDITORIALS

## Health Advocacy—Whose Job Is It?

Almost everyone who works in hospitals is attracted by the product. Ministering to humans who have urgent physical and emotional needs must be a major determinant in a decision to pursue a career in medicine or nursing. Attitude surveys indicate that this interest in helping others figures prominently among the rewards and benefits of those who work in hospitals fulfilling any of the 350 job titles. With about 3.0 full-time equivalent employees working directly or indirectly to assure each patient's well-being, what could a patient advocate or ombudsman contribute?

Now that patient advocates or patient representatives are being formally trained and programmed such as at Sarah Lawrence College, and about 2,000 hospitals (or 28% of 7,000 hospitals) have patient representative programs, it may help to identify those professional job categories which seem to be aimed at helping interpret organizational information and communication as distinct from clinical information. Among those with some responsibility for ensuring good communication are physicians, nurses, chaplains, social workers, discharge planners, administrators, risk managers, telephone operators, credit and collection managers, billing clerks, medical records clerks, and public relations individuals. Is there room for another specialist? Can the health care system afford to support the product of yet another graduate-level trained specialist? Its proponents suggest the health system must find a way to support such a product.

Proponents indicate that most existing systems for responding to complaints and enhancing communications are fragmented, too informal and lack the degree of authority to create change designed to prevent problems. Proponents say the individuals trained to be patient advocates should be articulate, well-educated, and have a general knowledge of the hospital as an organization and have sufficient authority to collect patient complaints and concerns and to communicate them to the appropriate departments in a way that guarantees a satisfactory response to the patient via the patient representative. Another advantage of such a department would be to analyze the quantity and quality of complaints and to intervene in such a way that problems or weaknesses are corrected.

Before anyone yields to the temptation to scuttle a relatively new idea, remember the frequent comment from physicians and nurses who become hospital patients: "Everyone of us should be required to be a patient to experience the product as a care-receiver rather than as a care-giver." This statement usually refers to the importance of clarity of communications to the patient and the family, that frightened pre-operative or medicated patients do not comprehend instructions, and that the best physicians are often the busiest. Some of those busiest physicians are also good at keeping patients and families informed, but each patient expects and deserves clear instructions, understandable answers to questions, and some idea about what to expect during hospitalization.

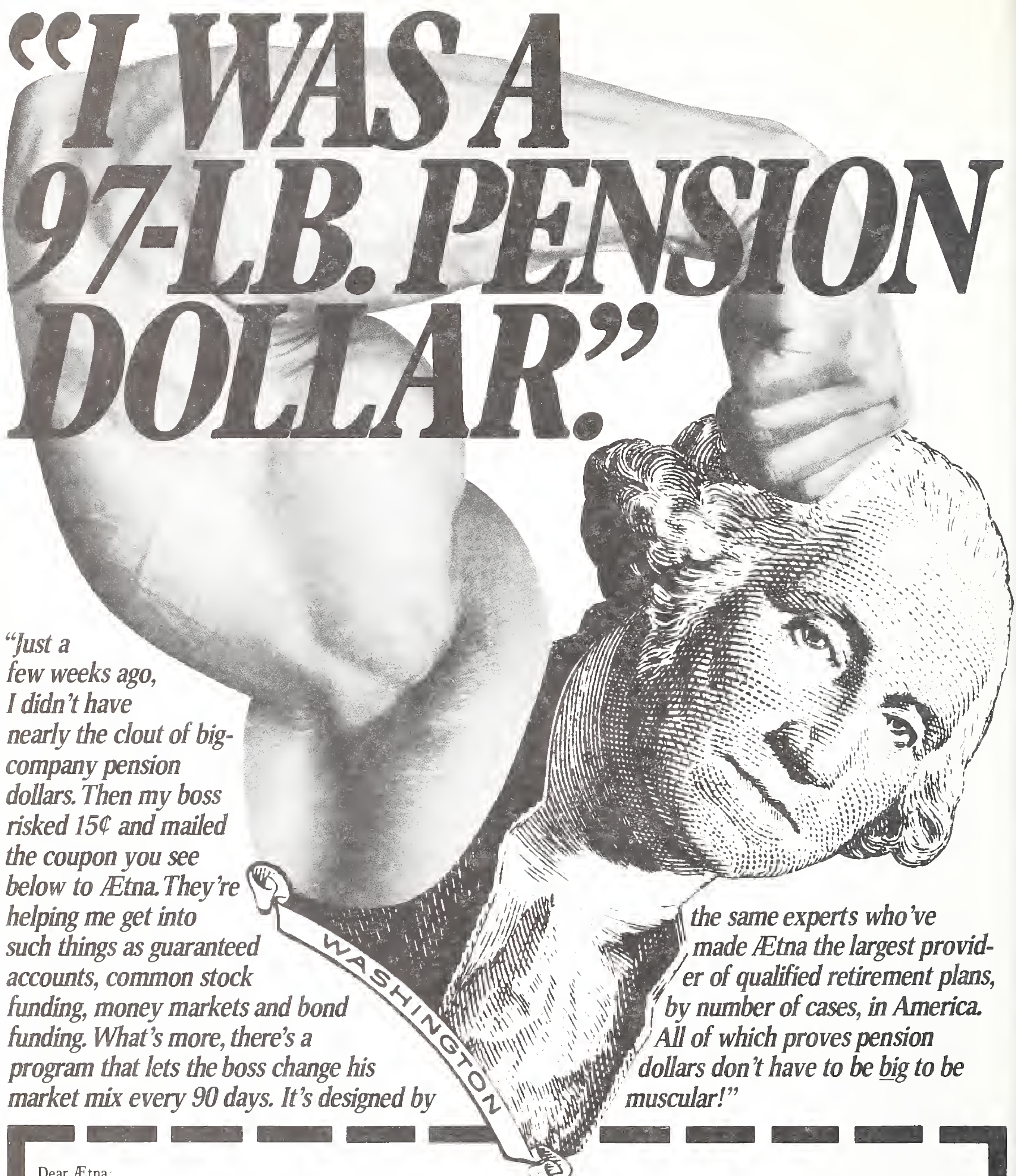
It seems obvious that pressures to make the technology more efficient and effective have increased our productivity, but has the product improved? Quality assurance studies and malpractice suits are two indices used to measure the quality of our product. An analysis of the records in both of these categories should help the management of hospitals decide whether or not the addition of patient representatives could be cost-effective. If a hospital concludes that malpractice losses could be reduced if patients' questions and complaints could be more assiduously resolved, then how should this function be established to guarantee accountability, yet some independence?

It seems likely that patients and visitors to hospitals will continue to judge these complex organizations by the degree to which its total employee force and Medical Staff exhibit a responsibility for health advocacy.

John K. Springer

*President and Executive Director*
*Hartford Hospital*

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*


"I WAS A 97-LB. PENSION DOLLAR."
WASHINGTON

*"Just a few weeks ago, I didn't have nearly the clout of big-company pension dollars. Then my boss risked 15¢ and mailed the coupon you see below to Ætna. They're helping me get into such things as guaranteed accounts, common stock funding, money markets and bond funding. What's more, there's a program that lets the boss change his market mix every 90 days. It's designed by the same experts who've made Ætna the largest provider of qualified retirement plans, by number of cases, in America. All of which proves pension dollars don't have to be big to be muscular!"*

Dear Ætna:

Yes, I want my pension dollars to have clout, too! I understand I don't have to be incorporated and that you can show me how to legally contribute different tax-deductible percentages of salary to myself and my employees. ☐ Send me your free literature. ☐ Have a representative contact me. Also tell me how I can convert without charge my developed assets into lifetime payouts for me and/or my employees. Mail to: Director of Pensions, Profit Sharing and IRA Sales, Ætna Life Insurance and Annuity Company, D309, 151 Farmington Avenue, Hartford, CT 06156
Tel.: (203) 273-6246

Print name____________________
Title________________Company________________
Address____________________
City________State______Zip______Phone number________

Ætna
LIFE & CASUALTY

This advertisement should not be construed as an offering of a variable annuity product. Such offering can only be made through a prospectus. Ætna Life Insurance and Annuity Company, one of the Ætna Life & Casualty companies.

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## COUNCIL MEETING

Thursday, December 18, 1980

### Attendance

Present were: Drs. James, Canzonetti, Parrella, Backhus, Hecklau, Kamens, Friedberg, Van Syckle, Whalen, Jr., Fabro, Cramer, Rubinow, Magram, Freedman, F. Barrett, Zlotsky, Doctor, Klimas, Abbot, Seide, Shenker, Czarsty, Sonnen and Callan.

Also present: Mr. Norbeck, Mr. Sweeney, Mr. Brunell, Mr. Fiorentino, Mrs. Lindquist and Mr. Tomat (FCMA).

Absent were: Drs. Mendillo, Jameson, Anderson, J. Barrett and Bates.

### Approval of Minutes

It was VOTED to approve the minutes of the meeting of October 15, 1980, as published and distributed.

Items Referred to the Council by the House of Delegates, 11/20/80:

### Resolution on Designated Compensation for Medical Mal-Occurrence

It was VOTED to refer the resolution on Designated Compensation for Medical Mal-Occurrence to the CSMS Committee on Professional Liability for study and report back to the Council.

### Tort Reform

In conjunction with the discussion about legislation, Dr. Isadore Friedberg reported to the Council that the Orthopedic Section had recommended that the CSMS employ a law firm to represent its interests in attempting to secure tort reform in the Connecticut General Assembly. It was mentioned that representatives from the Orthopedic Section were to appear before the Committee on Legislation rather than the Council. Recommendations, if so desired, may be made to the Council by the Committee on Legislation.

### Diploma Nursing Schools of Connecticut

It was VOTED to endorse the Association of Diploma Schools of Nursing in Connecticut.

### Report of AMA Delegation

Guy W. Van Syckle, M.D., reported on the recent AMA Convention in San Francisco, California. He mentioned that the AMA House of Delegates, in a close 104-100 vote, approved of a resolution to encourage the elimination of professional standards review organizations. Dr. Van Syckle also pointed out that the AMA House of Delegates had voted against endorsing the Equal Rights Amendment. He noted that the San Francisco Convention was the last one for Dr. J. Alfred Fabro and Sidney L. Cramer as members of the CSMS AMA delegation and said that their past valuable contributions had been recognized by the New England Delegation. He mentioned further that Dr. Fabro had worked diligently in assisting the AMA House of Delegates in developing policy statements on medical ethics and brain death. A written report on the highlights of the meeting was submitted by the executive director. It was VOTED to accept the reports as information.

### CSMS Medical-Legal Committee

It was VOTED to authorize the President to appoint a committee of seven physicians, including one from New London County, to serve as a liaison committee with the Connecticut Bar Association.

### Community Health Fair

After a brief discussion, it was VOTED to endorse the WFSB-TV 3 Community Health Fair with the stipulation that the test results will go to the patient and not obligate physicians for follow-up treatment.

### Report of the President

President James reported on two separate items:

1. He mentioned a letter recently received from John N. Dempsey, Chairman of the Connecticut Nautilus Committee, which requested a representative from CSMS to serve on the committee.

   It was VOTED to have New London County nominate a physician to serve on the Connecticut Nautilus Committee.
2. Dr. James discussed a liaison meeting held the day before with the Connecticut Hospital Association. The nursing situation in Connecticut was on the agenda along with a discussion on tort reform and CHA plans for a Liability Trust Company.

### Cumulative Minutes of Committee Meetings

It was VOTED to receive as information, and transmit to the Journal Editor, the minutes of committee meetings held as follows: Committee on Statewide Medical Planning, 9/22/80 and 12/9/80; Cancer Coordinating Committee, 9/24/80 and the Committee on Public Relations, 9/30/80.

There was discussion and the following actions taken with respect to the minutes of the meeting held on 12/9/80 by the Committee on Statewide Medical Planning:

1. It was VOTED that Society dues be waived for student members, and that dues for residents be set at $15 per year.
2. It was VOTED to table the following recommendation pending referral to legal counsel for further clarification:

   "That students and residents participate in county associations to whatever extent the counties may permit, but that students and residents have representation in the state society only through their approved state organizations; and that lists of such members be provided to county associations periodically."
3. A third recommendation that student and resident membership of CSMS be limited to persons enrolled in Connecticut-based programs . . . was withdrawn by Dr. Freedman, Chairman of the Committee on Statewide Medical Planning.

### Reports from Physicians Serving on State and Federal Agencies

In addition to the report prepared by Mr. Fiorentino on "CSMS Monitoring of Planning and Regulatory Activities" which appeared with the agenda, Merrill B. Rubinow, M.D., raised the issue of the Connecticut Commission on Hospitals and Health Care. After discussion of the composition of said body, it was VOTED that the 17 member part-time commission be replaced with a thirteen member commission, two of them practicing physicians from a list of nominees submitted by the Connecticut State Medical Society.

### Ad Hoc Advisory Committee to Commissioner of Public Safety

Edward A. Kamens, M.D., reported on a recent meeting which he and Patrick Concannon, M.D., attended with members of the Department of Public Safety (State Police). At the request of Dr. Kamens, it was VOTED to approve of the formation of a CSMS Advisory Committee to the Department of Public Safety. It was agreed that Dr. Damens would select the members of the committee.

### Date of 1981 Annual Meeting

The Council, having been informed that it was not possible to find a suitable location which could accommodate the House of Delegates and the Scientific Program on two consecutive days during the last week in April or first week in May, VOTED to have the House of Delegates meet during that time frame, and the scientific program the latter part of May.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on December 18, 1980. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

**CLASSIFIED ADVERTISING RATES**

$40.00 for 25 words or less; 50 cents for each additional word.

$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.

No agency commission on classified advertising.

Closing date: Copy must be received by the first day of month preceding month of issue.

A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

FOR RENT: Professional office, 100 Retreat Avenue, Hartford, Conn., 575 square feet, close proximity Hartford Hospital. Inquire 549-1900.

ROCKY HILL OFFICE—Available on part-time basis. Ideal as satellite office facility. Adjacent to Century Hills. "Cold Spring Medical Suite," Cold Spring Plaza, Rocky Hill. 529-3211.

Locum Tenens — COMPHEALTH. Our medical group can place a well-qualified physician in your practice during your absence. For more information call or write: Comprehensive Health Systems, Inc. 175 West Second South, Salt Lake City, UT 84101 (801) 532-1200.

FOR SALE or Rent—1600 square feet of prime medical office space in Waterbury. Available immediately. Unusual opportunity at very reasonable cost. Can subdivide. Financing available. Call W. Scott Peterson, M.D., 574-2020.

MEDICAL OFFICES For Rent Hamden; several ground floor office suites; some under construction for May occupancy; some completed; excellent location and parking; call R. Goldblatt 288-6293.

**PHYSICIANS NEEDED**

The Navy is seeking physicians who want an alternative to the administrative burden and expense of private practice. Our modern medical facilities provide the latest techniques and equipment. Opportunities exist to do research on projects both exciting and clinically meaningful, including aerospace and submarine medicine, underwater physiology and environmental and preventive medicine. Professional allowances in addition to competitive salaries. Non-taxable quarters and subsistence allowances. 30 days' paid vacation earned each year. Insurance, medical, dental package.
For more information, contact:

Lt. Paul Quinn, MSC, USN
Officer Programs Office
135 Burnside Avenue East Hartford, CT 06108
(203) 528-9988 collect

# In Memoriam

**PICCOLO, PASQUALE A.,** University of Maryland, 1937. Dr. Piccolo was an internist in the New Haven area since 1937. During World War II he served as a flight surgeon in the U.S. Army Corps with the rank of major. He served as recording secretary for the New Haven County Medical Association, and was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. He was also a past president of the medical staff at the Hospital of St. Raphael. Dr. Piccolo died November 27, 1980, at the age of 68.

**ROSAHN, PAUL D.,** New York University, 1928. Dr. Rosahn was a pathologist in the Hartford area since 1939. He was medical director of New Britain General Hospital from 1969 to 1973 and was New Britain's health director from 1972 to 1974. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Rosahn died December 15, 1980, at the age of 76.

**SALINGER, ROBERT,** Johns Hopkins Medical School, 1925. Dr. Salinger was a pediatrician in the New Haven area since 1932. He was a U.S. Army veteran of World War I. In 1932 Dr. Salinger entered private practice in New Haven and in 1938 he became director of health of Woodbridge. Two years later he created the Woodbridge Public Health Nursing Agency, with the assistance of C.E.A. Winslow. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Salinger died November 3, 1980, at the age of 87.

**SANDULLI, GAETANO R.,** Tufts Medical School, 1929. Dr. Sandulli was a general practitioner in the New Haven area since 1929. Until his retirement in 1966, Dr. Sandulli had maintained his own practice in Waterbury for over 35 years. At the same time, he had also been a physician for the Waterbury public school system. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Sandulli died October 16, 1980, at the age of 79.

**SNURKOWSKI, CHARLES V.,** Georgetown University, 1925. He was a general practitioner in the New Haven area since 1926, and served in the U.S. Army during two World Wars and the Korean conflict. During World War I he was a non-commissioned officer stationed at a New York hospital, and during World War II he served in the South Pacific as a colonel. During the Korean conflict he was in charge of an Army hospital in Japan. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Snurkowski died October 8, 1980, at the age of 84.

**TIERNEY, JAMES W.,** University of Vermont, 1948. Dr. Tierney was an obstetrician-gynecologist in the New Haven area since 1951. He was a U.S. Air Force veteran of the Korean conflict. Dr. Tierney was the first resident obstetrician in Milford and was responsible for initiating the combined Ob-Gyn unit at Milford Hospital. He was a member of the Milford Medical Society, a past president and member of the New Haven County Medical Association, and a member of the Connecticut State Medical Society and the American Medical Association. He was also the medical director of the New Haven County Foundation for Medical Care. Dr. Tierney died November 5, 1980, at the age of 58.

**TROY, WILLIAM D.,** Jefferson Medical School, 1936. Dr. Troy was a general practitioner in the Fairfield area since 1938, and was a Fellow of the American Academy of Family Physicians. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Troy died December 8, 1980, at the age of 69.

**WEISENFELD, NATHAN,** University of Maryland, 1928. Dr. Weisenfeld was a general practitioner in the Hartford area since 1928. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Weisenfeld died October 31, 1980, at the age of 80.

**WOOD, FRANK O.,** University of Chicago, 1931. Dr. Wood was an obstetrician-gynecologist in the Hartford area since 1931. In 1954 he did post-graduate work in gynecology at the Karolinsak Hospital in Stockholm, Sweden, and in 1959 he made a three-month teaching tour in the Cameroons, West Africa, where he spent several weeks with Dr. Albert Schweitzer. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Wood died November 27, 1980, at the age of 74.

# NEW MEMBERS

### FAIRFIELD COUNTY

Richard G. Abell, Riverside
John S. Banas, Jr., Bridgeport
Stephen J. Bittner, Bridgeport
Robert A. Caserta, Bridgeport
Marvin A. Cetel, Stamford
James A. Chase, Fairfield
Robert S. Folman, Bridgeport
Richard M. Freedman, Bridgeport
Kanti C. Gandhi, Bridgeport
Phyllis R. Headley, Bridgeport
David A. Hedrick, Greenwich
John G. Hellstrom, Greenwich
Roger H. Karlin, New Fairfield
Uwe C. Koepke, Danbury
Yen T. Lin, Greenwich
Anne E. Mauks, Danbury
Paul S. Mikan, Huntington
Jeffrey L. Oberman, Westport
Basil J. Papaharis, New Canaan
Daniel J. Passeri, Bridgeport
Raul Perez, Jr., Bridgeport
Dora Perino, Fairfield
William D. Rhodes, New Canaan
Joseph A. Rose, Bridgeport
Robert Rosenthal, Greenwich
Syed J. Shahid, Norwalk
William H. Yurgilevich, Bridgeport

### HARTFORD COUNTY

Clair M. Callan, Hartford
Robert J. Carpenter, III, Farmington
Lynn K. Davis, Hartford
Jonathan A. Dixon, Hartford
John H. Dodge, Hebron
Muttiah Ganeshananthan, Glastonbury
Leonard C. Glaser, Southington
Robert A. Green, Hartford
Stephen H. Greenberg, New Britain
Paul Henrys, Manchester
Barry Kels, Hartford
Ira Kolodny, West Hartford
David J. Krugman, New Britain
Fergus D.J. Lane, Bristol
Nancy-Coalter Lathrop, Hartford
Andre Lerer, New Britain
Leslie Levy, Hartford
Jacques Mendelsohn, Rocky Hill
Lawrence D. Mullany, Hartford
Charles R. Norris, Jr., Hartford
Arthur A. Ostrowitz, Manchester
Anthony S.D. Parisi, Bristol
Suppiah Pathmanathan, Hartford
Karlen L. Paulay, Southington
Jonathan P. Pendleton, Plainville
Burt D. Pina, East Hartford
Robert J. Porto, Southington
Michael S. Ptaszynski, Bristol
Chitraleka Ramanan, West Hartford
Paul A. Shapiro, Hartford
Evelyn F. Smith, Glastonbury
Choong S. Sohn, Southington
Joel I. Sorosky, Avon
Barry G. Spass, New Britain
Melvin I. Spielberg, Warehouse Point
Jonathan Stolzenberg, Newington
Rozann Venti, West Hartford
Gregory C. Walsh, West Hartford
George E. Wislo, Hartford

### LITCHFIELD COUNTY

James M. Bianco, Sharon
Peter T. Bull, New Milford
Marc B. d'Avignon, Torrington
Richard L. Gallager, Torrington
Kenrick E. Hom, Torrington
Ian S. Lowenthal, Torrington
William B. Peck, Sharon
Ernest P. Scarnati, New Milford
Charles E. Sherwood, Sharon

### MIDDLESEX COUNTY

Salvatore Muleh, Middletown
Erik Pingoud, Guilford
Paul K. Safer, Middletown
James Scanlon, Haddam
Arnold C. Winokur, Madison

### NEW HAVEN COUNTY

Micha Abeles, Meriden
Dure-Samin Akram, West Haven
Jeffrey N. Alter, Waterbury
John T. Auth, Waterbury
William F. Bingham, Waterbury
Helene L.P. Blitzer, New Haven
Joseph A. Brenes, Waterbury
Stephen Brenner, New Haven
Dante B. Cannarozzi, Waterbury
Christopher Canny, New Haven
Meimei Chang, Milford
Amritlal M. Dalsania, Meriden
Natalie de Leuchtenberg, New Haven
Edward J. Dill, Jr., New Haven
Gary S. Dorfman, Branford
Marc S. Eisenberg, Waterbury
Ellen R. Fischbein, Cheshire
Peter C. Greco, Waterbury
Chalmers M. Hamill, Thomaston
Murk-Hein Heinemann, Branford
Charles Hollander, New Haven
Dennis L. Huebner, Naugatuck
Peter Huvelle, New Haven
Eric A. Hyson, Waterbury
Jay Kaplan, Meriden
Suzanne P. LaGarde, New Haven
Anthony G. Lendino, Wallingford
Neil M. Lindenman, Waterbury
Phillip P. Luchini, New Haven
Thomas H. Lyons, Waterbury
Mark C. Maltzer, New Haven
Cynthia Mann, New Haven
M. Veronica Marer, New Haven
Alison McDonald, New Haven
Hope H. Meo, Waterbury
Paul B. Nussbaum, Derby
Theodore Piliszek, North Haven
Arumbakam Purushotham, New Haven
Paul R. Ramirez, New Haven
Gordon V.K. Reid, New Haven
Salvatore V. Romano, Waterbury
William E. Rosner, West Haven
Ronald T. Rozett, New Haven
Mark C. Ruchman, Waterbury
Victor R. Sawicki, Jr., Northford
Howard J. Senter, New Haven
Alan B. Silken, New Haven
Howard Simon, New Haven
Christina M. Smillie, Huntington
James Solomon, New Haven
Michael A. Solomon, Southbury
Henry D. Sostman, Wallingford
Stephanie S. Spangler, New Haven
Samuel P. Sprotzer, Orange
Robert D. Stein, Waterbury
Joanna E. Vincent, Waterbury
Albert C. Weihl, New Haven
Warren H. Weiswasser, New Haven
Charles F. White, Hamden
Joon K. Yeo, Wallingford

### NEW LONDON COUNTY

John W. Foster, Groton
Adeoye Olukotun, Groton
Vipinchandra C. Patel, Norwich
Gabriel Yuil, New London

### WINDHAM COUNTY

Neri Holzer, Putman
William E. Shevin, Putman
Joseph A. Weinberg, Willimantic

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### ANESTHESIOLOGY

Board certified or eligible Anesthesiologist for 170 bed hospital in Putnam, CT. Attractive rural community, good schools, easy drive to major cities. Join fee for service corporation offering good income plus multiple benefits. Include CV with first letter. Send resume to: Dr. Arturo Diaz, P.O. Box 509, Putnam, CT 06260.

### FAMILY PRACTICE

Large adult medical practice, now available for immediate sale in New Haven county. Yale affiliated hospital. Includes office and x-ray equipment. Send CV to CSMS/GP-ERH.

For sale—Medical Family Practice. Five exam. rooms fully equipped with lab. 2,000 sq. ft. of space. Central CT community location. Contact Mrs. Michael Gualtieri, 55 Forest Ridge Rd., Waterbury, CT 06708.

Opportunity for a young Family Practitioner to take over an active practice on a cost sharing basis. Presednt Family Practitioner wishes to retire gradually over the next two years. Call 1-203-443-3778.

### OBSTETRICS AND GYNECOLOGY

Obstetrician/gynecologist needed for growing multispecialty medical group of an established qualified HMO, affiliated with a medical center and serving 26,000 members. Require strongly qualified physician to work with OB/GYN group, midwives, and primary care physicians to provide comprehensive care. Excellent fringe benefits and salary with this permanent position to begin July 1, 1981 - EOE-M/F. Send resume to: Dr. Ronald T. Rozett, Medical Director, Community Health Care Center Plan, 150 Sargent Drive, New Haven CT 06511.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### ANESTHESIA

Available now. Age 31, AB-elig. Presently in practice MD: India. Int. and res.: Bronx Lebanon Hosp. Also res's.: Metropolitan Hosp., NY and Temple Univ. Hosp. Grp. or assoc. practice desired in CT. Rakesh R. Shah, M.D., 111-09 66 Rd. #3A. Forest Hills, NY 11375.

### FAMILY PRACTICE

Locum wanted for March and April '81. Family Practice office only, in Shoreline town. Contact CSMS/FP-RJNK.

ER or GP. May '81. Age 32. Presently in practice. MD: Univ. of Laval. Int.: Hosp. DeChicoutimi, both Canada. Grp. practice desired in med. community. Guy Bouchard, M.D., 535 Chabanec, Chicoutimi, Que., Canada G7H 3S5.

July '81. Age 32. Nat'l. bds., cert. Presently in practice. MD: State Univ. of NY at Buffalo. Int. and res.: Univ. of Maryland Hosp. Desire association with FP grp. in CT. Paul S. Thaler, M.D., 84 Church St., Ware, Mass. 01082.

### INDUSTRIAL MEDICINE

Jan. '81. Age 75. Conn. license. Nat'l. bds., MD: Yale. Res.: King's Cty., NY. Also res.: Yale New Haven Hosp. Just retired after a long GP/Anes. practice. Looking for Industrial practice in CT. Contact CSMS/Ind. Med.-WEB.

### INTERNAL MEDICINE

Available now. Age 33. FLEX. AB-cert. MD: Tulane. Int. and res.: Children's and Adult Med. Ctr., CA. Grp., assoc. or institutional practice in large or med. community. Contact CSMS/IM-MMM.

Available now. Age 35. Conn. license. AB-elig. Presently in practice. MD; Guadalajara. Int.: Dalhousie. Res's.: Rutgers; Yale Med. Sch.-St. Mary's Hosp. Grp. or assoc. practice in med. community. Michael Salzman, M.D., 457 Riverside Dr., Cheshire, CT 06410.

Pulmonary: Aug. '81. Age 29. Nat'l. bds., cert. MD: Georgeown. Int. and res.: Evanston Hosp., ILL. Fellowship: Univ. of VT. Will consider all types of practice except industrial in med. community. Would like to practice primarily pulmonary med., but will do IM. Contact CSMS/IM-Pul.-DTA.

Pulmonary: June '81. Age 34. Nat'l. bds., cert.-IM and Pul. MD, int. and res.: Creighton and affil. hospitals. Fellowship: Univ. of Utah. Currently in practice, Dir. Med. ICU. Will consider all types of practice in large or med. community. Vito A. Angelillo, M.D., 2274 So. 135th St., Omaha, NB 68144.

Nephrology: May '81. Age 28. Nat'l. bds., cert. MD: Univ. of Calgary-Canada. Int. and res.: Cambridge Hosp.-Harvard. Fellowship: Univ. of Minn.-Hennipen Cty. Med. Grp., assoc. or institutional practice in CT. Michael J. Germain, M.D., 2745 Alabama Ave., St. Louis Park, MN 55416.

July '81. Age 28. Nat'l. bds., MD: Jefferson Univ. Int. and res.: Wilmington Med. Ctr. Will consider all types of practice even HMO except solo. Louis Hammerman, M.D., 2201 Kater St., Philadelphia, PA 19146.

July '81. Age 30. Conn. license. Nat'l. bds., elig. MD: Case Western. Int. and res.: Univ. Hosp., Ohio. Also res.: UConn. Grp. or assoc. practice desired. Contact CSMS/IM-JGJ.

IM or ER: July '81. Age 29. Nat'l. bds., elig.-7/81. MD: Univ. of CA. Int.: UCLA. Res.: Univ. of Washington. Will consider all types of practice in med. or sm. community except solo. Seeking clinic, emergency or grp. IM practice. Christopher Nielson, M.D., 5548 38th Ave., NE, Seattle, WA 98105.

Endocrinology & Metabolism: July '81. Age 34. Conn. license pending. Nat'l. bds., cert.-med. '77; E&M '79. MD: Jefferson Univ., Phil. Int.: E.W. Sparrow Hosp., Lansing, MI. Res.: Michigan State Assoc. Hosp.'s. Fellowship: Michigan State-Dept. of Med.: Endo. & Metab. and Dept. of Pharmacology Clinical Pharm. Prefer Fairfield County. Solo, grp. or assoc. practice desired, will consider institutional and industrial. Charles E. Rhodes, M.D., 5225 Blue Haven Dr., East Lansing, MI 48823.

Nephrology: July '81. Age 30. Nat'l. bds., cert. MD, int. and res.: SUNY-Upstate. Fellowship: Boston (Nephrology/Hypertension). Grp., assoc. or institutional type practice in large or med. community. Howard A. Sackel, M.D., 39 Cottonwood Dr., Stoughton, Mass. 02072.

## INTERNAL MEDICINE - CONTINUED

Primary Care: July '81. Age 27. Nat'l. bds., elig.-6/81. MD: Emory Univ., GA. Int. and res.: Univ. of Maryland Hosp. Grp., clinic or HMO. Large or med. community. Alan M. Shorofsky, M.D., 5615 Pimlico Rd., Baltimore, MD 21209.

July '81. Age 28. Nat'l. bds., elig. MD: NY Univ. Int. and res.: Univ. of VA. Hospitals. Grp. practice desired in large or med. community. Strong experience in critical care medicine. David J. Stone, M.D., 105A Stewart Circle, Charlottesville, VA 22903.

Oncology: July '81. Age 30. Nat'l. bds., cert. MD: Cornell. Int. and res.: Univ. of VA Hosp. Fellowship: Georgetown. Solo or grp. practice. Steven E. Zimmerman, M.D., 7562 Westlake Terr., Bethesda, MD 20034.

## NEUROLOGY

July '81. Age 26. FLEX. AB-elig. MD: India. Int.: New Brunswick affil. hosp., NJ. Res's.: NY Med. Coll.; State Univ. of NY; Upstate Med. Ctr., NY. Solo, grp. or assoc. practice in large or med. community. Syed M.A. Hazratji, M.D., 211 Lafayette Rd., #313, Syracuse, NY 13205.

## OBSTETRICS AND GYNECOLOGY

Jan. or July '81. Age 37. AB-cert. Presently in practice. MD: Gondi-Shapoor Univ. Int.: Princeton. Res. and fellowship: Roosevelt Hosp., NY. Grp. or assoc. practice in CT. Contact CSMS/OB-GYN-FA.

July '81. Age 31. AB-elig. MD and int.: India. Res.: St. Univ. Hosp., Upstate Med. Ctr., NY. Grp. or assoc. practice in large or med. community. Will do both OB&GYN. Mohammed M. Mohiuddin. M.D., 215 Locksley Rd., Syracuse, NY 13224.

## OTOLARYNGOLOGY

July '81. Age 29. Nat'l. bds., elig. MD: Columbia P&S. Int.: St. Luke's Hosp., NY. Res.: Univ. of Chicago. Fellowship: Med. Coll. of PA. Grp. or assoc. practice in large or med. community. Howard Taylor, M.D., 8201 Henry Ave., P-3, Philadelphia, PA 19128.

## PEDIATRICS

July '81. Age 27. Nat'l. bds., elig. MD: Cornell. Int. and res.: NY Hosp. Grp. practice desired. Miles Dinner, M.D., 436 East 69th St., New York, NY 10021.

July '81. Age 30. Nat'l. bds., cert. MD: Univ. of ILL. Int. and res.: Upstate Med. Ctr. Fellowship: Child Development, RI Hosp. Solo, grp. or assoc. practice in med. community. Owen R. Ehrlich, M.D., 5-D Squire Lane, East Providence, RI 02915.

July '81. Age 30. AB-elig. MD: Univ. of Bologna, Italy. Int. and res.: Albany Med. Ctr. Grp. or assoc. practice desired in med. community. Daniel L. Mayer. M.D., 194 Morris St., Albany, NY 12208.

Jan. '81. Age 33. AB-elig. MD and int.: India. Res.: Jewish Hosp., Brooklyn, NY. Assoc., grp. or solo practice in med. community. S. Nutakki, M.D., 22 Metropolitan Oval, #5G, Bronx, NY 10462.

July '81. Age 29. AB-elig. MD: India. Int. and res.: Elmhurst Hosp., NY. Also res. in psychiatry-2 yrs. Will consider all types of practice except industrial. Rajendra C. Parikh, M.D., 77-07 Woodside Ave., #3A, Elmhurst, NY 11373.

## RADIOLOGY

July '81. Age 30. Nat'l. bds., cert. MD: Columbia P&S. Int.: Overlook Hosp., NJ. Res.: Columbia-Presbyterian Med. Ctr. Fellowship. Einstein (Ultrasound and computerized tomography). Grp. practice desired. Michael J. Schnur, M.D., 281 Garth Rd., Scarsdale, NY 10583.

## SURGERY

Gen./Colon & Rectal: Available now. Age 35. Presently in practice. FLEX. AB-cert. MD: Dow Med. Coll., Pakistan. Int., res. and fellowship: Henry Ford Hosp. Will consider all types of practice in large or med. community except industrial. Mainly interested in practice of Proctology but would do Gen. Surg. Jawaid Akhtar, M.D., 21634 Stratford Ct.. Oak Park, MI 48237.

Gen. & Vascular: Aug. '81. Age 31. AB-elig. MD: Tehran Univ. Med. Sch. Int.: St. Clare's Hosp., NY. Res.: Wilson Mem. Hosp., NY. Fellowship: St. Luke's Hosp., Texas Heart Institute, TX. Grp. or assoc. practice in med. or sm. community. Dariush Vaziri, 7510 Brompton Court, #587, Houston, TX 77025.

July '81. Age 34. Nat'l. bds., elig. MD: Med. Coll. of Wisconsin. Int.: St. Joseph's Hosp., Milwaukee. Res.: (Plastic Surg.) Wright State Univ., Dayton. Fellowship: (Hand Surg.) Rush-Presbyterian-St. Luke's., ILL. Solo, grp. or assoc. practice in large or med. community with higher education nearby. Daniel Allen, M.D., 1522 W. Harrison, Chicago, ILL 60607.

July '81. Aged 36. AB-elig. MD: Christian Med. Coll., India. Int. and res.: St. Joseph's Hosp., Denver (Trauma, Hand Surgery, England). Solo, assoc., grp. or institutional practice desired in med. or sm. community. Sudheer V. Mitra, M.D., J-104: 10225 E. Girard, Denver, CO 80231.

Gen. and Per. Vas.: July '81. Age 31. FLEX. AB-elig. MD: India. Int., res. and fellowship: Worcester City Hosp., Mass. Special interests in Hyperalimentation, and Surg. Intensive Care. Solo, grp. or assoc. practice in CT. Contact CSMS/Surg.-KAS.

## UROLOGY

July '81. Age 32. AB-elig. MD: India. Int.: Cook County Hosp., ILL. Solo, grp. or assoc. practice in large or med. community. Vasant Betkerur, M.D., 10015 S. Hill Terr. 28/202, Palos Hill, ILL 60465.

July '81. Age 31. Nat'l. bds., elig. MD: Chicago, Med. Sch. Int. and res.: Boston Univ. Med. Ctr. Res.: (Urology) Med. Coll. of VA. Grp. or assoc. practice in CT. Presently conducting a clinical practice in Washington, D.C. Contact CSMS/Urol.-IK.

July '81. Age 32. Nat'l. bds. elig. MD: SUNY. Int. and res.: North Shore Univ. Hosp.-Cornell. Grp., assoc. or institutional practice in large or med. community. Jerome P. Parnell, M.D., 435 E. 70th St., #28C. New York, NY 10021.

July '81. Age 30. Nat'l. bds., elig. MD: Univ. of Pittsburgh. Int. and res.: Mt. Sinai Hosp., NY. Grp. or assoc. practice in large or med. community. Harvey Schoenbrum, M.D., 1249 Park Ave., Apt. 14A, New York, NY 10029.

# Streptococcus Bovis Endocarditis and Colon Carcinoma

MELVIN SALTZMAN, D.O., MYRON H. BRAND, M.D. AND
MATTHEW McKINLEY, M.D.

**ABSTRACT—Recently, the association of Streptococcus bovis bacteremia with carcinoma of the colon and other gastrointestinal lesions has been made.[1-5] We wish to present a case in which this association was searched for and found. In addition, we wish to present a brief review of the current literature.**

## Case Report

A 61-year-old caucasian female was admitted to The Hospital of St. Raphael in June, 1979 with shortness of breath. During the months of March to May 1979, she had experienced diarrhea. This consisted of 3 - 4 brown, watery bowel movements per day without cramping or tenesmus. She reported a 15 - 20 pound weight loss during this time. Past medical history was negative except for hypertension treated by a thiazide diuretic which she denied taking during this illness. On June 8, she saw her physician and was found to be anemic with a hemoglobin of 9.0 grams. The MCV was 72 with a serum iron of 30 and a total iron binding capacity of 228. A bone marrow aspiration biopsy was reported as showing mild myeloid hyperplasia and increased iron stores.

During the course of the next few days she had a barium enema and an upper G.I. series, both of which were reported as normal. On June 19, the patient noted a marked increase in stool volume up to 15 liquid brown movements per day. She was experiencing mild dyspnea at that time. Her fluid intake was increased to compensate for her losses and severe dyspnea resulted, causing her to come to the Emergency Department at St. Raphael's Hospital.

Her admission vital signs showed a blood pressure of 140/80, pulse of 140, respiratory rate of 40; her temperature was normal. The electrocardiogram showed a sinus tachycardia with premature ventricular contractions. A grade 2/6 holosystolic murmur was heard at the apex radiating to the axilla. Rales were heard on inspiration in both lung fields. The remainder of the physical examination was negative.

Laboratory data included a hemoglobin of 9.8 grams with a 31% hematocrit. The white blood count was 19,700 with 86 segs, 7 bands, 6 lymphocytes, and 1 monocyte. Serum electrolyte determinations revealed a sodium of 136 meq/dl, potassium of 3.6 meq/dl, Chloride of 103 meq/dl, and Co2 of 16.

The admission chest X-ray showed pulmonary edema. The patient was admitted and treated with oxygen, digoxin and lasix, improving slightly.

The patient spiked a temperature to 102 degrees fahrenheit. Blood cultures were obtained and she was empirically placed on intravenous Gentamycin and Penicillin. An echocardiogram showed mitral valve prolapse, a small pericardial effusion, and a hyperkinetic left ventricle. The day after admission five separate blood cultures grew out gram positive cocci. This organism was subsequently identified as Streptococcus bovis.

From June 23 to July 24 the patient was treated with intravenous penicillin, as well as digoxin, lasix, oxygen and blood transfusions. The clinical diagnosis of S. bovis endocarditis with left ventricular failure was made. The patient improved during the treatment and experienced no diarrhea while in the hospital.

As the patient stabilized and neared completion of her course of antibiotics, the G.I. service was asked to evaluate the patient. Review of the barium studies obtained prior to admission led to the suspicion of a lesion in the right colon. An air contrast study with antibiotic prophylaxis was then obtained, and revealed a villous appearing lesion in the right colon. Stool guaiac test was positive and sigmoidoscopy was normal.

The patient underwent right hemicolectomy. A villous lesion was found and contained adenocarcinoma (Dukes C). Postoperatively the patient did well.

## Commentary

As recently as 10 years ago, it was felt that carcinoma of the colon was associated with non-bacterial thrombotic endocarditis,[6] and that bacterial endocarditis associated with colon malignancy was a rare event.

---

MELVIN SALTZMAN, D.O., Fellow in Gastroenterology, Yale University School of Medicine. MYRON H. BRAND, M.D., Attending Gastroenterologist, The Hospital of St. Raphael; Assistant Clinical Professor of Medicine, Yale University School of Medicine. MATTHEW McKINLEY, M.D., Fellow in Gastroenterology, The Hospital of St. Raphael.

Reprint requests to: 2 Church Street South, New Haven, CT 06519 (Dr. Brand).

The first report of a bacterial endocarditis with colon carcinoma appeared in 1951.[7] This was the report of a single case in which an adenocarcinoma of the colon was found in a patient who within 60 days of that diagnosis was found to have endocarditis caused by "Enterococcus" identified as Streptococcus fecalis.

In 1973 Ravreby, et al[8] published a report illustrating the clinical value of distinguishing between enterococcal and non-enterococcal Group D streptococci. In many clinical microbiological labs at that time, S. bovis was being incorrectly identified and subtyped with the enterococci (S. fecalis & S. faecium). Their report emphasized the laboratory techniques needed to differentiate this bacterium. They also noted that S. bovis was usually exquisitely sensitive to a wide variety of antibiotics including penicillin, while the enterococci were resistant to many antibiotics and required potentially toxic combinations of antibiotics for treatment. S. bovis is a member of Lancefield's Group D and is a non-enterococcal gram positive coccis.

In 1974, the association of bacterial endocarditis with colonic carcinoma was once again reported, with three cases being presented.[9] In that same year two papers appeared comparing the clinical features of bacterial endocarditis caused by Enterococcus with those of S. bovis.[10,11] Moellering, et al[10] showed that there were only minor differences in clinical presentation but that S. bovis was much more sensitive to penicillin, and had a lower mortality rate. Hoppes and Lerner[11] illustrated the same points, stating that reports of enterococcal endocarditis with penicillin-sensitive enterocci were probably unrecognized S. bovis infections (this was the situation in the 1951 case.)[7] They reported 14 cases of S. bovis endocarditis and their associated clinical diagnoses. Colon carcinoma was not reported in any of their patients, although four patients had colonic polyps.

In 1977, Klein et al reported an association of S. bovis with carcinoma of the colon.[2] They discovered two patients with adenocarcinoma of the colon and S. bovis endocarditis. They found nine prior cases (in the reports mentioned above). This prompted them to investigate the incidence of S. bovis in the colonic flora. In a study of 278 patients with and without gastrointestinal disease and cancer they found a statistically significant difference in patients with colon cancer, when compared to all other groups. In their cancer group, they noted a 56% incidence of S. bovis while their control group had a 10% incidence of Strep bovis. Inflammatory bowel disease patients had a 28% incidence and patients with resected colon cancer a rate of 25%.

Additional reports have supported the view[3-5] that patients with S. bovis endocarditis with or without gastrointestinal symptoms should be investigated for gastrointestinal disease. Twenty-nine patients with 30 episodes of S. bovis endocarditis were studied prospectively by Klein and his group.[5] Nineteen of these patients had no gastrointestinal symptoms or occult bleeding. In the group of fifteen completely investigated, 13 were found to have gastrointestinal neoplasms, (11 in the colon). Of the 14 patients not completely investigated, 2 malignancies, 1 adenomatous polyp, and three colonic masses were found. At our institution, Jaffe and Troncale (unpublished data) found a significantly higher incidence of S. bovis carriage in the fecal flora of patients with polyps showing marked atypia, an incidence comparable to patients with invasive carcinoma.

Our patient is one who might not have had her gastrointestinal tract investigated further if her physicians had not been aware of this association of S. bovis endocarditis and gastrointestinal disease.

Further research needs to be done to define the exact factors that result in this association of S. bovis with gastrointestinal disease. The possibility that screening of fecal flora for S. bovis may be a test to indicate further gastrointestinal work-up should be investigated. In 1980, it is safe to say that every patient with S. bovis bacteremia should be investigated for gastrointestinal disease, even in the absence of symptoms.

## REFERENCES

1. Keusch Gerald T: Opportunistic Infections In Colon Carcinoma. Am J Clin Nutr 27:1481-1485, 1974
2. Klein Robert S, Recco Rose A, Catalano Michela T, Edberg Stephen C, Casey Joan I and Steigbigel Neal H: Association of Streptococcus Bovis With Carcinoma of The Colon. N Engl J Med 297:800-802, 1977
3. Murray Henry W, Roberts Richard B: Streptococcus Bovis Bacteremia and Underlying Gastrointestinal Disease. Arch Intern Med 138:1097-1099, 1978
4. Smith Theodore R, Friedman Stanley N, Adler Howard: Streptococcus Bovis Septicemia as a Clue to Colon Neoplasms in Two Cases. Am J Roentgenol 131:887-888, 1978
5. Klein RS, Catalano MT, Edberg SC, Casey JI, Steigbigel NH: Streptococcus Bovis Septicemia and Carcinoma of The Colon. Ann Intern Med 91:560-562, 1979
6. Bryan Charles S: Nonbacterial Thrombotic Endocarditis With Malignant Tumors. Am J Med 46:787, 1969
7. McCoy Walter C, Mason James III: Enterococcal Endocarditis Associated With Carcinoma of the Sigmoid. JMA Alabama 21:162-166, 1951
8. Ravreby William D, Bottone Edward J, Keusch Gerald T: Group D Streptococcal Bacteremia, With Emphasis On the Incidence And Presentation of Infections Due to Streptococcus Bovis. N Engl J Med 289:1400-1403, 1973
9. Roses Daniel F, Richman Howard, Localio S Arthur: Bacterial Endocarditis Associated With Colorectal Carcinoma. Ann Surg 179:190-191, 1974
10. Moellering Robert C, Watson Barbara K, Kunz Lawrence J: Endocarditis Due to Group D Streptococci Comparison of Disease Caused by Streptococcus Bovis With That Produced By The Enterococci. Am J Med 57:239-250, 1974
11. Hoppes William L, Lerner Phillip I: Nonenterococcal Group D Streptococcal Endocarditis Caused By Streptococcus Bovis. Ann Intern Med 81:588-593, 1974

# Connecticut Physician's Role in Preventing Dental Caries

NORMAN TINANOFF, D.D.S., M.S., RONALD PINKERTON, M.D. AND
CHITRALEKA RAMANAN, M.D.

## Introduction

Physicians caring for children may significantly decrease lifelong dental caries by assessing and correctly modifying systemic fluoride ingestion in their pediatric patients. Fluoridation of municipal water supplies alone reduces dental caries by 60%, and requires no cooperation by patient or provider. However, many Connecticut water companies do not supply optimally fluoridated water and many families consume drinking water from their own wells which may vary in fluoride content. Because of the importance of this essential micronutrient, the fluoride intake for every child should be evaluated and adjusted if necessary.

Although most dentists are aware of the necessity for supplementing fluoride-deficient diets, children usually do not visit the dentist until age 3 (or perhaps even later). During these first few years of life, fluoride ingestion achieves the greatest long-term benefit. Therefore, the physician is the important focus for this effective, simple preventive measure because optimal daily fluoride ingestion plays the key role in preventing dental caries.

When children ingest fluoride during the early years of permanent tooth formation (birth to 8 years of age) the mineral structure of tooth enamel is altered by replacing some of the hydroxyl groups in the enamel structure with fluoride ions. This more stable fluorapatite mineral phase is less susceptible to demineralization produced by bacterial acids and subsequent carious lesions (cavities). Thus, appropriately adjusted fluoride intake during the child's first few years of life may drastically improve future dental health.

## Distribution of Fluoride in Connecticut Water Supplies

The fluoride concentration of the child's drinking water should be determined before the physician prescribes any dietary supplements. According to state law, any Connecticut water company that supplies 20,000 or more residences must optimize the fluoride content in the water to 1 ppm. Table 1 lists those water companies supplying optimally fluoridated water. Thus, by asking a patient to whom they pay their water bill, physicians can easily identify whether or not that family consumes optimally fluoridated water. If a child drinks optimally fluoridated water, systemic fluoride supplements are contraindicated. Excessive fluoride ingestion may produce fluorosis (white striations on the permanent teeth) which the patient may consider esthetically unacceptable. If a family receives drinking water from a well, however, the fluoride content may vary widely.

As a public service two years ago, the Department of Pediatric Dentistry at the University of Connecticut Health Center initiated a fluoride analysis program for individuals consuming water of unknown fluoride content. Since that time, our program has analyzed the water of over 400 Connecticut wells, with most samples from wells supplying single families (Figure 1). Eighty percent of these water samples had insignificant amounts of fluoride, i.e., less than 0.3 ppm fluoride. Ten percent had fluoride levels between 0.3 - 0.7 ppm, requiring a partial fluoride supplement. Five percent were in the optimal range, between 0.8 and 1.2; while five percent, (predominately from the Coventry area) were found to have fluoride levels above 1.2 ppm. Although the information in Figure 1 may be used as a guide for the location of naturally fluoridated areas in Connecticut, it is still advisable to determine the

---

NORMAN TINANOFF, D.D.S., M.D., Associate Professor, Department of Pediatric Dentistry, University of Connecticut Health Center. RONALD PINKERTON, M.D., Director of the Family Medicine Residency Program, Mount Sinai Hospital, Hartford. CHITRALEKA RAMANAN, M.D., Assistant Professor, Department of Pediatrics, University of Connecticut Health Center, Farmington.

Table 1

CONNECTICUT WATER COMPANIES WHICH HAVE OPTIMIZED THE FLUORIDE CONTENT OF THE WATER THEY DISTRIBUTE

(Source - Connecticut State Department of Health)

Berlin Water & Sewer Commission
Bridgeport Hydraulic Company
Bristol Water Department
Connecticut Water Company
  Guilford-Chester Division
  Naugatuck Division
  Northern Division
Cromwell Fire Department
Danbury Water Department
East Lyme Water Commission
Greenwich Water Department
Groton Water Department
Hillcrest Fire District
Kensington Fire District
Manchester Water Department
Mansfield Training School
Meriden Water Department
Metropolitan District Commission
Middletown Water Department
Mystic Valley Water Company
New Britain Water Department
New Canaan Water Company
New Haven Water Department
New London Water Department
Noank Fire District
Noroton Water Company
Norwalk 1st Taxing District
Norwalk 2nd Taxing District
Norwich Water Department
Rockville Water & Aqueduct Company
Southbury Training School
Southington Water Department
Stamford Water Company
Torrington Water Company
University of Connecticut
Wallingford Water Department
Waterbury Water Department
Watertown Water & Sewer Authority
Willimantic Water Department
Worthington Fire District

fluoride content on an individual basis before fluoride supplementation is initiated.*

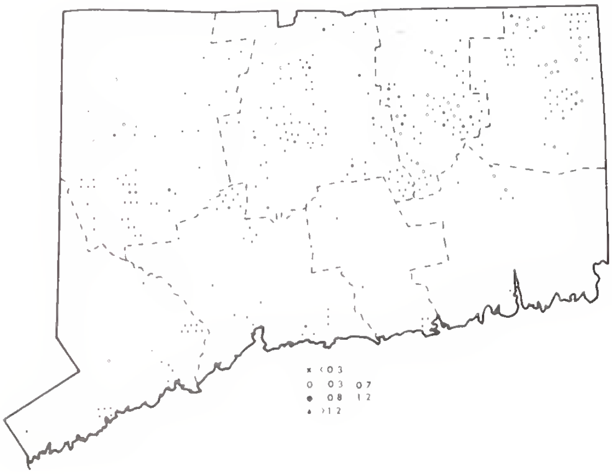


Figure 1
Approximate location and amount of fluoride in well water samples analyzed from Connecticut wells.

## Fluoride Supplementation

Based on the finding of mild fluorosis in some children supplemented with previous fluoride regimens,[1] the American Academy of Pediatrics, Committee on Nutrition recently recommended a slightly lower dosage of fluoride for the first two years of life[2] (Table 2). Supplemental fluorides increase the fluoride intake to the amount obtained from optimally fluoridated water. Unlike optimally fluoridated water sources, success of fluoride supplementation depends upon motivated parents supervising regular daily intake. In Table 3 we give examples of fluoride prescriptions for children of different ages ingesting non-fluoridated water.

Table 2
FLUORIDE DOSAGE IN RELATION TO CONCENTRATION OF FLUORIDE IN WATER (ppm)[2]

| | | Fluoride Content of Water | | |
|---|---|---|---|---|
| | *Age* | *Less than 0.3 ppm* | *0.3 to 0.7 ppm* | *Greater than 0.7 ppm* |
| | Birth to 2 | 0.25 mg F* | 0 mg F | 0 mg F |
| Fluoride | 2 to 3 | 0.50 mg F | 0.25 mg F | 0 |
| Dosage | 3 to 13 | 1.00 mg F | 0.50 mg F | 0 |

*The essential change from previous protocols is the 0.25 dosage from birth to age 2.

Pharmaceutical companies, in recognition of these lower fluoride dosages for infants (Table 2), also altered the fluoride concentration in fluoride supplements. Luride Lozi Tabs® (Hoyt Laboratories) can

---

*For fluoride analysis of drinking water, contact the Department of Pediatric Dentistry, UCONN Health Center, Farmington, Connecticut 06032 or call (203) 674-2180 to obtain a mailable water sample vial. After a water sample is received, a fluoride analysis will be done and a written report will be sent back to the requestor. A fee of $5.00 will be required to cover the costs.

Table 3
EXAMPLES OF FLUORIDE PRESCRIPTIONS

1. Three month old patient being breast fed and residing in an area with drinking water less than 0.3 ppm F.
   $R_X$: Sodium Fluoride solution (0.125 mg F-/drop)
   Disp: 40 ml
   Sig: Before bedtime dispense 2 drops liquid in mouth
2. Three year old patient in an area with drinking water less than 0.3 ppm F.
   $R_X$: Sodium Fluoride Tabs (1 mg F-/tablet)
   Disp: 120
   Sig: Before bedtime after a thorough brushing and flossing chew one tablet, swish and swallow
3. Six year old patient whose well has been analyzed to contain 0.5 ppm F.
   $R_X$: Sodium Fluoride tablets (half strength) (0.5 mg F-/tablet)
   Disp: 120
   Sig: Before bedtime after a thorough brushing and flossing chew one tablet, swish and swallow

Note: To avoid accidental overdose, do not prescribe more than three months' supply in any one prescription. The prescription bottle should carry the warning: "Keep out of reach of small children." If in case of accidental overdose, copious quantities of milk should be drunk and then vomiting should be induced.

now be purchased in 0.25 mg F-/tablet. Luride drops® has been reformulated to dispense 0.125 mg F-/drop. Tri-Vi-Flor® (Mead Johnson) vitamin-fluoride supplements now contain 0.25 mg F-/1.0 ml dose instead of 0.5 mg F-.

Previously, no fluoride supplements were recommended when infants were ingesting commercial infant formulas since the infant formulas then contained variable amounts of fluoride depending on manufacturing site. As of January 1979, all infant formula manufacturers began formulating these products with essentially fluoride-free water. The resulting change helps simplify fluoride administration in infants because human breast milk and cow's milk contain virtually no fluoride. For infants residing in fluoridated communities during the period in which their nutrient intake is primarily breast milk, cow's milk or infant formula, dietary fluoride supplement is recommended until the child drinks the fluoridated water. However, if fluoridated water is used to dilute the infant formula or if other factors make it difficult to ascertain the amount of fluoridated water being consumed, we advise no fluoride supplement.

The controversy concerning fluoride supplements for pregnant women in their last trimester (attempting to impart caries protection in their offspring) has reemerged. Because lack of sufficient clinical evidence about the efficacy of fluorides taken during pregnancy, the U.S. Food and Drug Administration (F.D.A.) in 1966 banned the sale of fluoride products designated for such use.[3] However, this ban was not imposed from the standpoint of safety; furthermore, the ban did not prohibit physicians and dentists from prescribing fluorides to pregnant women during pregnancy. Although some studies support prescribing fluorides, there is not enough evidence at the present time for the F.D.A. to remove the ban.[4] Caution should be exercised in prescribing systemic fluorides to pregnant women because any medication consumed during pregnancy raises suspicion regarding idiopathic birth defects. We recommend no prenatal fluoride supplements.

### Non-Prescription Fluoride Mouthrinses

Although systemic fluoride remains the primary focus for physicians, topical fluorides also decrease caries by altering bacterial metabolic processes responsible for the carious process as well as affecting the enamel structure. Certainly, professionally applied fluoride treatments and fluoride toothpastes help reduce caries and are widely used. Additionally, dentists may recommend specific fluoride mouthrinses in patients with advanced dental disease.

Recently, some over-the-counter (O.T.C.) fluoride mouthrinse preparations have become available. This apparent change of status of fluoride agents, however, does not reflect a change of policy by the F.D.A. which still considers all fluoride preparations, except fluoride-containing toothpastes to be prescription items.[6] This product marketing confusion has arisen due to recommendation of an F.D.A. panel which suggested that certain fluoride mouthrinses be made available without a prescription. Some companies subsequently have "jumped the gun" and marketed these products in anticipation of a change in F.D.A. policy. It is possible that the F.D.A. may not endorse its consultant's recommendations and the status of fluoride products now marketed as non-prescription will be changed.

### REFERENCES

1. Aasenden R and Peebles TC: Effect of Fluoride Supplements from Birth on Human Deciduous and Permanent Teeth. Arch Oral Biol. 19:321-326, 1974
2. Committee on Nutrition American Academy of Pediatrics. Fluoride Supplementation: Revised Dosage Schedule. Pediatrics 63:150-152, 1979
3. Food and Drug Administration. Statement of General Policy on Interpretation, Oral Prenatal Drugs Containing Fluorides for Human Use. Federal Register, October 20, 1966
4. Food and Drug Administration. Topical Fluoride Preparations for Reducing Incidence of Dental Caries. Federal Register, May 6, 1974
5. Ibid.

# Prostaglandins: An Overview

DAVID I. WEISBLAT, PH.D.

After 50 years of research, prostaglandins remain at the cutting edge of medical science, and new discoveries continue to widen the scope of their potential therapeutic use.

Prostaglandins (PGs) are among the most potent physiologically active substances known, with one-billionth of a gram producing measurable effects. Found in almost every fluid and tissue in the human body, these hormones help control such life processes as reproduction, inflammation, blood pressure, metabolism, intraocular pressure, sodium excretion and norepinephrine release.

The first 40 years of prostaglandin research were a preface, a search for means to insure a plentiful supply of these ephemeral substances. During that time, their therapeutic potential remained unclear. The complexity of PG molecules plagued us, and their instability proved a barrier to physiological research. Only during the past 10 years has their therapeutic potential begun to be realized.

At the time of their discovery, however, science had neither the tools to investigate, nor the medical knowledge to appreciate their importance.

## The Beginning

In 1930, New York gynecologist Raphael Kruzrok and pharmacologist Charles C. Leib began a study of female sterility based on their finding that artificial insemination sometimes causes severe uterine contractions. The two researchers discovered that some unknown substance in seminal fluid caused constriction of smooth muscle from nulliparous uteri and relaxation of uterine tissue from women who had borne children.

The trail was picked up later in the 1930s by Dr. Maurice W. Goldblatt in England and Professor Ulf von Euler at the Karolinska Institutet in Sweden. Working independently, they found that some substance in human seminal fluid not only constricted smooth muscles, but lowered blood pressure when injected into animals. Furthermore, they were able to show that the biological properties of the substance could not be attributed to any known compounds. Von Euler "provisionally" dubbed the factor prostaglandin, because he had found trace amounts in prostate gland tissue and wanted to differentiate it from vesiglandin, another acidic lipid he had discovered in the seminal vesicle.

World War II and inadequate analytic techniques interrupted prostaglandin research for 20 years. By 1950, new projects had caught the interest of researchers originally involved in PG work. After the war, Professor von Euler began investigating noradrenaline, which eventually earned him the Nobel Prize. However the prostaglandin project seemed to him too promising to abandon. He asked his colleague, Dr. Sune Bergström, to resume efforts to purify the extract and determine its structure. In 1949, Bergström reported that there was more than one prostaglandin.

Using sheep vesicular glands and improved microanalytic techniques, Bergström and his colleagues worked for five years to establish the structure of prostaglandins. Excitement increased in the late '50s when Dr. Bergström, in conjunction with Dr. Jan Sjovall, reported the isolation and crystallization of the first prostaglandins, $PGF_1$-alpha and $PGE_1$. But it had become obvious that for the infant field to grow, Dr. Bergström needed tons of sheep vesicular glands, which he could ill afford.

---

DAVID I. WEISBLAT, Ph.D., earned his doctorate in organic chemistry in 1941 at Ohio State University and joined The Upjohn Company in 1943. He was named Vice President, Pharmaceutical Research and Development, in 1968 and a member of the company's Board of Directors in 1973.

Among his numerous affiliations, Dr. Weisblat has been a member of the Chemistry Panel of the Cancer Chemotherapy National Service Center and served as associate editor of *Chemical Reviews,* the American Chemical Society publication. He was recently awarded an Honorary Doctor of Medicine Degree by the Karolinska Institutet in Stockholm in recognition of his long-term involvement at Upjohn with the development of the prostaglandins as therapeutic agents.

My own friendship with Dr. Bergström had begun in 1941. We met during the course of my postdoctoral work at Ohio State University. Over the years, we had regularly corresponded and visited one another. Near the time of his discovery, Dr. Bergström wrote me:

"I am now involved and excited about 'prostaglandins' of sheep prostate glands that we have separated into at least two factors. . . . We are collecting some data on the structure—but keep it under your hat. One is smooth muscle stimulating and one also blood pressure decreasing. The main trouble now is supply of raw materials."

A week later I wrote back indicating that The Upjohn Company was extremely interested in his work and its considerable therapeutic implications. I believed we could help him obtain sufficient prostate glands to complete his studies and, perhaps, work out a collaborative program to support him in degradative and/or synthetic chemical work. We also arranged to finance Dr. Bergström's studies and assist with the collection of sheep vesicular glands.

During the next several years, Dr. Bergström worked with small quantities of sheep glands and new techniques to establish the structure of prostaglandins. He found a series of six primary PGs of closely related structure and a variety of physiological activities. Further studies at the Karolinska Institutet and other laboratories brought the number found in human tissues to 14.

But the major stumbling block to practical application remained: The supply of prostaglandins from sheep glands was too small to allow broad biological testing.

The bottleneck was broken in 1965 when researchers at The Upjohn Company, at the Karolinska Institutet and at Unilever Research Labortories in the Netherlands simultaneously found an answer to PG supply problems.

They discovered that a natural fatty acid found in the body—arachidonic acid—might be converted to a PG under certain chemical or enzymatic conditions. This bioconversion method used fatty acid precursors incubated with sheep vesicular glands. The Upjohn scientists developed and scaled up this process. It was costly: A million dollars' worth of PG fit comfortably within a Petri dish. Yet, for nearly five years, this method provided almost all the material for worldwide prostaglandin studies.

Total synthesis of all 14 PGs from commercially available sources was achieved in 1968 by Dr. Elias J. Corey's group at Harvard and by Upjohn scientists. The following year, Drs. A.G. Weinheimer and R.L. Spraggins of the University of Oklahoma discovered a new source of prostaglandins, a gorgonian coral called *Plexaura homomalla,* or sea whip, collected off the Florida coast. Prostaglandins or their esters are present in the air-dried coral at levels of one to three percent, a concentration much greater than found in man. Improved extraction techniques allowed us to supply PGs, for many years free of charge, in sufficient quantities to permit biological exploration to continue and expand in laboratories around the world. The number of samples provided each year has grown steadily to the point where last year we filled 5,675 requests for these compounds. In a quite remarkable parallel, the number of articles dealing with prostaglandins has grown: More than 4,900 PG articles appeared in scientific journals during the course of that year.

### The Life Cycle of Prostaglandins

A great deal has been learned about PGs in the course of this work. Prostaglandins have been found to occur naturally in almost every mammalian cell and tissue. They are produced in minute quantities; a man normally manufactures 0.1 mg/day of the two first discovered PGs: $PGE_1$ and $PGF_1$-alpha. PGs' effects are extremely varied, sometimes opposed to one another and occasionally biphasic.

The body manufactures prostaglandins from certain polyunsaturated fatty acids catalyzed by hormonal, neural, pathological, chemical and other stimuli. They are synthesized within the individual cells in which they are produced, although there is evidence that PGs also influence nearby cells and tissues.

PG biosynthesis involves several stages. PG endoperoxides, such as $PGG_2$ and $PGH_2$, are formed from arachidonic acid and other fatty acids. These endoperoxides may exert a biologic action themselves or be transformed into the more potent thromboxanes, into prostaglandins or into prostacyclin, also known as $PGI_2$. Whether arachidonic acid is converted into $PGE_2$, $PGF_2$-alpha, thromboxanes or other substances is determined by factors that are unknown.

Prostaglandins contain 20 carbon atoms arranged with five in a ring and the rest in two chains extending from carbons adjacent to each other in the ring. The primary natural prostaglandins are denoted in a hieroglyphic shorthand that indicates all the important features of the molecule. The letters A through I describe what kind of oxygen atoms and chemical bonds occur in the ring, numbers indicate how many double bonds are present in the ring, and Greek letters describe the arrangement of atoms in space. The six primary prostaglandins are the E and F families of the 1, 2 and 3 series.

One reason prostaglandins remained obscure for so many years after their existence was first suggested is that they are broken down into metabolites so rapidly. The compounds function only briefly, with the PGEs and PGFs disappearing from the circulation in less than a minute. They are deactivated by enzymes in the lungs and to a lesser degree, in the kidney and liver.

### Physiological/Pharmacological Action

It is almost impossible to catalog the various effects of prostaglandins, especially since some have diametrically opposed actions. While $PGE_2$ lowers blood pressure, $PGF_2$-alpha raises it; $PGE_1$ and $PGE_2$ both dilate bronchial airways, whereas $PGE_2$-alpha constricts them; $PGE_1$ and $PGF_2$ help initiate or repress the process of inflammation and under proper conditions of administration inhibit stomach acid secretion.

Prostaglandins are at least partially responsible for lowering or raising blood pressure, dilating or constricting bronchi, inhibiting or augmenting platelet aggregation, inhibiting gastric secretion, stimulating or relaxing intestinal and smooth muscle, shrinking nasal passages, inhibiting or enhancing norepinephrine release, causing sedation, stupor or fever, increasing intraocular pressure, mediating inflammation, stimulating steroid production, promoting sodium excretion, catalyzing the pain-producing action of bradykinin and inducing labor.

They are also intimately involved in transmission of neural impulses by the sympathetic nervous system through cyclic AMP, a hormonal mediator that triggers the tissue to perform its specific function. Depending on the tissue and the species, PGs either increase or decrease the amount of cAMP released.

Such a broad spectrum of activities provides a major challenge to researchers charged with discovering and delivering the right prostaglandin to the proper site.

The first confirmation of the clinical value of prostaglandin research took place in Uganda, where Dr. Sulton H.M. Karim was investigating the chemical processes of childbirth. In 1970, he discovered that $PGF_2$-alpha caused uterine contractions and effectively induced labor at term.

The first prostaglandin products licensed for use anywhere in the world—Prostin F2 alpha ($PGF_2$-alpha) and Prostin E2 ($PGE_2$) were approved in 1972 in England for labor induction and therapeutic abortion. These two products and a $PGF_2$-alpha analog, Prostin/15M, were later approved in the U.S., where all three are indicated for therapeutic abortion, and Prostin E2 is also indicated for fetal death in utero and benign hydatidiform mole.

One of the more fascinating prostaglandin discoveries was the recognition by Dr. John R. Vane, now of the Wellcome Research Laboratories in England, that aspirin's anti-inflammatory action is largely due to its inhibition of the formation of endogenous prostaglandins. This observation gave new importance to the use of prostaglandin synthesis inhibitors, because it helps explain the utility of nonsteroidal anti-inflammatory agents such as Motrin (ibuprofen) in arthritis, dysmenorrhea and other conditions associated with abnormally high PG levels.

### In the Future

What do I visualize as the future of prostaglandins?

First, I expect Upjohn to receive approval in the relatively near future of Prostin VR (prostaglandin $E_1$) for maintaining the patency of the ductus arteriosus in neonates with certain congenital heart defects until corrective surgery can be performed. This is a rare occurrence, but in most cases the infants would die if not treated. We consider the development of this drug for this use a public service, because despite its importance in some cases, its market is extremely limited.

Beyond that, I expect wider therapeutic utility will be proven for Prostin VR, prostacyclin and selected prostaglandin analogs in the cardiovascular field.

Investigators have known for quite some time that prostaglandins affect the aggregation of platelets *in vitro*. However, only in the last six years have their roles in the human body been elucidated.

The first breakthrough came in 1975 when Drs. Bengt I. Samuelsson and Mats Hamberg of the Karolinska Institutet reported discovery of the thromboxanes. The Swedish researchers established that polyunsaturated fatty acids are first converted to endoperoxides, then—via incubation with blood platelet enzymes—to thromboxane $A_2$, the most potent natural aggregator of platelets ever discovered, and to other thromboxanes.

The second breakthrough was the discovery of prostacyclin by Dr. Vane of Wellcome. Working together, Upjohn and Wellcome researchers determined the structure of prostacyclin, and Upjohn scientists developed the first chemical synthesis of this promising new compound. Clinical experiments have shown it to be the most potent natural inhibitor of platelet aggregation yet known, even more potent than prostaglandin $E_1$, although the two compounds have other dissimilar qualities that may suit each to its own particular niche in medical therapy.

To date, clinical trials of $PGE_1$ have shown promise in the treatment of peripheral vascular disease, which is estimated to have caused amputations in some 22 percent of the six million known diabetics. In many of the patients studied, intra-arterial Prostin VR infusion has been associated with ulcer healing, an end to resting pains and improvement in blood microcirculation.

Prostacyclin is also being studied for this indication, although its greatest progress so far is in the area of platelet preservation in cardiopulmonary bypass procedures and charcoal hemoperfusion. Damage to platelets during these periods of extracorporeal circulation appears to be reduced by the administration of prostacyclin, an effect which reduces postprocedural medical complications.

Both Prostin VR and prostacyclin—and analogs—are being or will be studied in other cardiovascular problem areas such as stroke and myocardial infarction, but the research is sufficiently preliminary to make it impossible to predict the outcome of such experiments at this time.

I also expect prostaglandins to find clinical use in ulcer treatment and prevention. André Robert, M.D., Ph.D., of Upjohn has established that certain prostaglandins inhibit gastric secretion in various animal models, and several studies in humans suggest that certain methyl analogs of $PGE_2$ promote the healing of gastric and duodenal ulcers.

Prostaglandins may also be used prophylactically against these ulcers. In several animal models, PGs have been found to protect the lining of the stomach and the small intestine from damage normally produced through administration of toxic agents (e.g., indomethacin, salicylate, alcohol, acid, alkali, bile salts and boiling saline). In humans, gastric bleeding produced by Indocin and aspirin is prevented by concurrent administration of $PGE_2$. This intriguing effect has been designated "cytoprotection."

As previously mentioned, natural prostaglandins are broken down rapidly and, for the most part, locally. At present, we are investigating what—if any—effects some of the potentially useful analogs may have over a period of time in the body.

Another area where I expect expanding application of prostaglandins is in obstetrics and gynecology, where they have shown promise for "cervical ripening," or softening, prior to surgical procedures and labor induction. Other studies are under way using PG analogs for menstrual regulation in cases of late onset of menses and of prostaglandin $F_2$-alpha to control bleeding and atony in cases of postpartum hemorrhage.

In addition, Dr. Samuelsson has recently discovered that in an alternate metabolic pathway, polyunsaturated fatty acids are converted to leukotrienes. Eventually, this discovery may lead to a cure for asthma. It is thought that leukotriene $D_4$ may be identical to slow-reacting substance of anaphylaxis (SRS-A), a compound implicated in bronchial asthma. We are now intrigued by the possibility of inhibiting this metabolic pathway to develop anti-asthmatic agents.

Finally, I expect discoveries and developments in as yet unexplored areas. We have had surprises in the past. I expect more in the future. The only thing I'm confident of is the increasing importance of prostaglandins in clinical medicine, an importance that will eventually rival that of the steroids.

---

## Follow-up on Tuberculosis Among Indochinese Refugees

Two surveys of all state tuberculosis control programs for information about tuberculosis among Indochinese refugees have been conducted by CDC.[1] The responding areas received 92% of arriving refugees in 1979 and 86% of the refugees who entered the United States from January through June 1980. A summary of the data from these 2 surveys follows.

Participating areas reported that 920 Indochinese refugees were added to tuberculosis case registers in 1979; 1,272 more were added during the first 6 months of 1980. Based upon these data, it is estimated that as of June 30, 1980, the prevalence of current tuberculosis among those refugees who entered the United States in 1979 was approximately 1,500 per 100,000—nearly 60 times the estimated prevalence of current tuberculosis among other persons in the United States. As of the same date, the prevalence of tuberculosis among those refugees who entered the United States this year was about 1,100 per 100,000. The latter rate is expected to increase because the medical evaluation of some refugees who entered this year was incomplete at the time of the survey.

The annual incidence of tuberculosis among Indochinese refugees who entered the United States in 1979 and who did not have tuberculosis when evaluated overseas is estimated to have been 500 per 100,000, approximately 40 times the incidence of tuberculosis among other persons in the United States. Incidence rates of this order of magnitude have been reported from developing countries where there is a high prevalence of tuberculosis infection.[2] Since January 1979, Indochinese refugees have accounted for an estimated 4.5% of the newly reported cases; when cases are included that were verified overseas and therefore not counted in U.S. morbidity statistics, refugees accounted for 6.1% of cases added to tuberculosis case registers.

Preventive therapy of refugees who are infected with *Mycobacterium tuberculosis* can prevent many cases of tuberculosis. Data from participating areas indicate that approximately 14% of Indochinese refugees have been started on such therapy. Therefore, in addition to the estimated 2,500 refugees added to tuberculosis case registers, more than 26,000 have been started on preventive therapy by tuberculosis control programs throughout the country.

*Reported by the Tuberculosis Control Div, Bur of State Services, CDC.*

*References*

1. MMWR 1980; 29:383-4, 389-90.
2. Lowell AM. Tuberculosis in the world. Atlanta, Ga.: CDC, 1976. (DHEW publication no. (CDC) 76-8317).

—*Morbidity and Mortality Weekly Report,* Nov. 28, 1980, Vol. 29, No. 47, Center for Disease Control, Atlanta, Ga.

# The Nursing Shortage: A Long-Term Dilemma

DIANA NOVICKY, R.N.

> *We are witnessing a systematic decline in the preparation of new nurses, while all evidence indicates an increasing demand for nursing services in coming years.*
>
> —Matthew F. McNulty, Jr.
> President, National League for Nursing

This sad commentary on the state of nursing in the United States was released early in 1980 after a nationwide survey of state-approved schools of nursing revealed the first student decline in nearly two decades.

The annual survey by the National League for Nursing also forecasted another ominous warning: The shortage will continue because of a decline during the 1978-79 academic year in first-year admissions and total enrollments in educational programs preparing registered nurses.

Concluded President McNulty: "The adverse impact of this decline upon the provision of health care services in the United States cannot be overemphasized."

Since that release, the "nursing shortage" problem has drawn considerable media attention. Data from numerous surveys have been published and discussed and the concern has spread to many professional organizations and health care agencies. They are under fire and their members "are burning the midnight oil" in order to assess the effects on their own communities.

At the very least, the nursing shortage dilemma must be viewed as a series of complex, interrelated factors. An examination of the basic economic issue of supply and demand is a reasonable starting point.

### How many nurses are needed?

An estimated 1.1 million registered nurses are now needed in the United States, according to government figures. If the number of registered nurses active in their profession is accurate, 87 per cent of the required number of nurses is already available. Figures, however, can be misleading. Based on the number of vacant hospital positions and declining enrollments, the shortage problem will probably continue and grow more serious with time.

A poor distribution of the nurses across the country seems to be a key contributing factor to the shortage. However, not only is it a geographic maldistribution, but one which varies greatly within the State of Connecticut and even within its hospitals and other health care facilities. A recent survey conducted by nursing service administrators in this state found that many of the vacant positions were on particular shifts—evening and night primarily—and were often part-time positions. In some cases, the shortage was more severe in certain units within an institution.

### Retaining nurses: a challenge in the '80s

Although many causes for the shortage have been cited, it is now fairly clear that no single factor is at fault. There is also no single or simple solution. The experts agree, however, that one of the best ways to deal with the problem is to decrease the turnover among nurses. If an institution can keep its nurses, the hard-hitting effects of the shortages can be diminished or slowed.

Because of the great competition among health care employers, retaining nurses will be one of the great challenges faced by the industry in the 1980s. Hospitals will continue to hire full-time nursing recruiters and new marketing programs to attract nurses will become standard operating practice. Recruitment ads will become more and more attractive and keen hospital researchers will identify census tracts scattered across this country that have surplus nurses. Programs to attract young, graduating nurses will also become sophisticated and intense. Job fairs will become even bigger business.

### Recognizing the 'real' problems

In spite of this 'high pressured' marketing approach, retaining nurses will continue to be a problem unless employers realistically examine their basic work environments. The industry must continue to improve the economic rewards for nurses within the confines of cost

---

DIANA NOVICKY, R.N., Assistant Administrator—Patient Services, The Hospital of St. Raphael, New Haven, CT. She is also chairperson of the Connecticut Hospital Association's Task Force on Hospital Nursing.

containment commissions. Employers must also work harder to improve the nurses' feeling of satisfaction in their career. Hospitals and health care institutions can strive for this in a number of ways.

First of all, nursing must be recognized as a physically and emotionally demanding profession. Recognizing nurses as a valuable human resource also places a great responsibility on employers. New techniques must be found and developed to help them use their time efficiently and effectively. Much of this effort begins with more accurate ways to assess nursing care needs so appropriate staffing problems can be identified and developed.

For instance, many hospitals are now using various methods of patient classification, some using computerized systems to better manage staffing needs on a daily basis. In this way, good patient care will become even better and the recorded information provides planning information as well as budget justification information.

### Creative planning helps

Many times, pilot projects can serve as the launching pad for creative ideas. There should be more experiments with variation in scheduling beyond the five day, 40-hour work week. Pilot programs in this area have been quite successful in many intensive care units. Sometimes this four-day work week provides greater flexibility in scheduling. And, for the nurse who needs the extra "recovery time," the three days off is just what the doctor ordered. There are any number of scheduling techniques that can be designed and tried. The potential positive impact may be significant.

Will it ever be possible to eliminate shift rotations? Most health care institutions are moving in this direction. For nurses who view rotation as unsatisfactory, this can become a stabilizing factor. And while this trend is continuing, it will be difficult to accomplish totally, particularly in light of availability problems for certain shifts.

### Do patients really come first?

Perhaps the biggest impact can be made in nurse retention by examining the practice environment and implementing methods of providing nursing care that reduce the feelings of dissatisfaction and discontinuity of care that so many nurses have felt in the past. Certain methods of providing care, such as primary nursing, assist both patient and nurse in gaining a sense of assurance that all aspects of the nursing process are directed by one professional in a comprehensive manner. There has been considerable study of this method, and good evidence to suggest positive impacts on both patient and nurse satisfaction as well as reduction of nurse turnover rates.

The move to enrich nursing practice for the professional can take many forms. While primary nursing continues to be helpful in this regard for many hospitals, it is not the only method that can be used. The development of systems that view nurse satisfaction, patient satisfaction and other variables of measurement that describe a quality practice environment need to be developed. We cannot ignore the matter of nurse-physician relationships as they relate to the practice environment. The concept of joint practice attempts to address this issue by encouraging physicians and nurses to collaborate as colleagues to provide patient care in the health care setting.

In the long term, the quality of practice factors will be a decisive factor in the progression or decline of the supply of nurses. Without attention to this vital area the incentive to enter and/or remain in the profession will be lacking.

Long-range planning also dictates that more attention be paid to the development and expansion of nursing education programs and encourage greater upward mobility educationally so there is a clearer, more readily available "career ladder" for nursing.

Again, the problem is not simple. Books can be written to cover each of the aforementioned areas. Nevertheless, it is vital that the "nursing shortage" issue in this country be recognized as a many-faceted, complex array of circumstances. This essay merely summarizes the scope of the problem.

The immediate management of the problem is generally felt to be possible by focusing on quality environment and retention factors, while long term planning will continue to examine these factors and also more actively address the quantitative aspects in an attempt to attract students into the nursing profession.

Employers and educators alike will be looking for new data from many sources, including the many task forces and commissions currently studying the dilemma. It is a challenge that faces all health care professionals.

### REFERENCES

"For New Nurse: Bigger Role in Health Care." *U.S. News and World Report.* January, 1980

"It's A Nurse's Market." *Modern Health Care.* March 1980

Moses, Evelyn, and Roth, Aleda. "Nursepower." *American Journal of Nursing.* October, 1979. pp. 1745-1756

"National League For Nursing." (Memorandum. *News.* September, 1980. New York, New York

"National League For Nursing." *News.* January-February, 1980, New York, New York

"The Nurse Shortage Dilemma." Division of Nursing, American Hospital Association. January, 1979, pp. 1-23

"Why We Don't Have Enough Nurses." *The Washington Post.* March, 1980. pp. 8-10

# Important Advances in Clinical Medicine

## Epitomes of Progress — General and Family Practice

### Nitrates in Treatment of Congestive Heart Failure

Cardiac functioning is regulated by four factors: preload (ventricular end-diastolic volume), afterload (ventricular systolic thrust), contractility (force of ventricular contraction) and heart rate. These factors determine the stroke volume and cardiac output.

Consequently, the physiological approach to treatment of refractory heart failure is based on improving one or all of the above factors. In simple terms, preload, afterload, contractility and heart rate are corrected to allow the failing contractile force to discharge a normal cardiac output.

It has been known for some time that vasodilators such as parenterally given phentolamine (Regitine), sodium nitroprusside, and hydralazine, to various degrees, reduce both left ventricular preload and afterload, thereby decreasing pulmonary venous pressure and increasing cardiac output.

Only recently have nonparenteral medications such as topically administered nitroglycerin and orally administered isosorbide dinitrate been shown to reduce primarily the preload. Contrary to the action of parenterally given vasodilators, the nitrates appear to have more effect on venous volume than on the resistance vessels. Consequently, their action results in a greater reduction in left ventricular preload than in afterload, which, in turn, generally produces a reduction in left ventricular filling pressure and relieves symptoms of pulmonary congestion. The effects of nitrates on peripheral resistance and cardiac output are variable. These drugs are used primarily in treating patients with congestive heart failure and a high pulmonary capillary wedge pressure, but in whom the left ventricular maintains a normal cardiac output.

Nitroglycerin, given as a topical ointment in 1-inch strips, is effective for up to four hours. This amount may be increased by one inch every other day as needed. Isosorbide, administered orally or sublingually, is effective for up to three hours.

Another effect of nitrates which may improve the hemodynamics of the heart is the increase in myocardial oxygen supply. Many hypertrophied heart muscles need extra oxygen. Myocardial perfusion may be improved by the resulting dilatation of coronary arteries; however, the aortic pressure should not be allowed to fall below that necessary to perfuse those same arteries.

But in patients with severe cardiac failure, in whom impedance (afterload) is a major factor in the failure, orally given hydralazine tends to decrease systemic vascular resistance. Afterload reduction should not be attempted, however, without determining the degree of pulmonary congestion and of peripheral hypoperfusion, while the patient is in the coronary unit.

It is remarkable how quickly systemic vasodilators have become an important new medical advance in the treatment of acute and chronic congestive heart failure. In the future, as more experience is gained with the use of nitrates and as newer vasodilators become available, these medications will likely be used as often as digitalis in the standard treatment of congestive heart failure. For the present, family physicians should use the nitrates only as a supplement to the standard regimen of digitalis, diuretics and decreased use of dietary salt.

Wilfred Snodgrass, MD

REFERENCES

Franciosa JA, Nordstrom LA, Cohn JN: Nitrate therapy for congestive heart failure. JAMA 240:443-446, Aug 4 1978

Franciosa JA, Blank RC, Cohn JN: Nitrate effects on cardiac output and left ventricular outflow resistance in chronic congestive heart failure. Am J Med 64:207-213, Feb 1978

Massie B, Chatterjee K, Werner J, et al: Hemodynamic advantage of combined administration of hydralizaine orally and nitrates nonparenterally in the vasodilator therapy of chronic heart failure. Am J Cardiol 40:794-801, Nov 1977

### Fetal Monitoring

The use of the nonstress test is a reliable indication of fetal well-being in cases of suspected uteroplacental insufficiency. The test is rapid and inexpensive, requires little physician time and is easy to carry out. It can be used in broader circumstances than the contraction stress test. The technique involves monitoring fetal heart rate and fetal activity. A reactive pattern consists of four episodes of an increase of fetal heart rate of at least 15 beats per minute, lasting 15 to 20 seconds after fetal movement. Twenty minutes are allowed for activity. If the activity does not occur, an additional 20-minute period is allowed.

A response other than full reactive, including (1) no fetal activity of fewer than four accelerations or (2) less than 15 beats per minute increase, demands further evaluation. A reactive pattern correlates well with fetal well-being and is equivalent to a negative contraction stress test. In situations requiring prolonged evaluation the test should be repeated weekly.

In a large study 75.5 percent of fetuses considered at high risk had reactive nonstress tests and went to term with no perinatal mortality. In conjunction with the contraction stress test, the nonstress test offers broader application, less expense and an accurate and sensitive screen program.

Phillip F. Mac, MD

REFERENCES

Cetrulo CL, Freeman R: Antepartum fetal heart rate monitoring. Obstet Gynecol Annu 7:125-134, 1978

Aladjem S, Feria A, Rest J, et al: Fetal heart rate responses to fetal movements. Br J Obstet Gynecol 84:487-491, Jul 1977

Nochimson DJ, Turbeville JS, Terry JE, et al: The nonstress test. Obstet Gynecol 51:419-421, Apr 1978

## Adjunctive Laboratory Tests for the Early Diagnosis of Pregnancy

Currently available immunologic tests for pregnancy are based on detecting human chorionic gonadotropin (HCG) in the urine or blood. HCG is essential for the maintenance of the corpus luteum and the viability of early pregnancy.

HCG can reliably be detected in the urine by the antigen antibody reaction two weeks following a missed menstrual period, using the office slide test or the more sensitive two-hour laboratory tube test.

With radioimmunoassay (RIA), the $\beta$ subunit of the HCG molecule can be detected shortly after implantation, several days before the missed period. This test is carried out using blood rather than urine and is extremely sensitive. Considerations limiting its use include, expense ($20 to $25) and the 36 to 48 hours required to obtain a result.

More recently available is the radioreceptor assay (RAA) test for HCG. This method detects the HCG molecule by measuring its competition for specific receptor sites on cell membranes prepared from bovine corpora lutea. Except for the potentially false-positive result due to the midcycle surge of luteotropin, also called luteotropic hormone (LH), at ovulation, this is the most sensitive test for pregnancy available. A test result can be provided in one to two hours, and the cost is $15 to $18.

HCG is essential for the maintenance of pregnancy and the amount present is generally proportional to the amount of trophoblastic tissue present. Significantly elevated levels may suggest multiple gestation, while very low levels may suggest impending abortion or a nonviable pregnancy. Absolute levels of HCG are useful in the diagnosis and monitoring of a hydatidiform mole and choriocarcinoma. These values are obtained most reliably with the $\beta$ subunit test, using the RIA method.

In addition to the normal trophoblast of pregnancy, both trophoblastic and nontrophoblastic neoplasms are known to be associated with elevated HCG levels as well.

Walter P. Ordelheide, MD

REFERENCES

Braunstein GD, Rasor J, Adler D, et al: Serum human chorionic gonadotropin levels throughout normal pregnancy. Am J Obstet Gynecol 126:678-681, Nov 15, 1976

Landesman R, Saxena BB: Results of the first 1,000 radioreceptorassays for the determination of human chorionic gonadotropin—A new, rapid, reliable, and sensitive pregnancy test. Fertil Steril 27:357-368, Apr 1976

## New Concepts in the Treatment of Vaginitis

Vaginitis can be a frustrating problem for patients and physicians alike. In the past, the office procedure included the following steps: take a cervical culture for gonorrhea; look at a wet mount of the secretions for trichomonads, and then add sodium hydroxide to the secretions and look for mycelia, which would indicate an infection caused by *Candida.* When these tests were negative the infection was classified as nonspecific, and a variety of treatments were instituted. The main treatment for *Trichomonas vaginalis* was metronidazole (Flagyl) therapy, 250 mg three times a day for ten days, for both the patient and her sexual partner. Patients with candidal infections were treated with nystatin; patients with nonspecific vaginitis were treated first with a triple sulfa cream, followed by ampicillin given orally if the local treatment proved ineffective.

Recent improvements in methods of treatment will make patients and physicians much more comfortable. Miconazole and clotrimazole are replacing other drugs as the treatments of choice for *Candida albicans.* The current recommended treatment is a seven-day regimen of miconazole cream or clotrimazole tablets. Of course, patients who have recurrent candidal infections should be screened for diabetes mellitus. Also, administration of tetracyclines and birth control pills predispose women to candidal infections.

At present, shorter courses of Flagyl have been recommended for trichomonal infections. A regimen of 500 mg, taken twice a day for five days by both sexual partners, seems to be as effective as the ten-day course.

The most important new information on this subject has been written by Pheifer and co-workers. They studied patients with nonspecific vaginitis by cultures and determined that the usual treatment of *Haemophilus vaginalis* infections with sulfonamides and ampicillin was either useless or minimally effective. They advocate metroniazole (Flagyl) therapy for this problem, in a dosage of 500 mg two times a day for seven days. Also, *H vaginalis* can be identified sometimes by the presence of "clue cells" on Gram stains of specimens of the vaginal secretions. Addition of a 10 percent solution of potassium hydroxide to the wet mount will produce a fishy odor from the secretions of patients with *H vaginalis.*

With this recent information, patients with vaginitis stand a better chance of having their infections properly diagnosed and treated. This, in turn, should reduce the frustration of having these patients return to the office with continued symptoms because the treatment has proved ineffective.

Ralph E. Berggren, MD

REFERENCES

Fleury FJ: Vaginal infections—New drugs and dosages. Female Patient, Jan 1979, pp 25-33

Pheifer TA, Forsyth PS, Durfee MA, et al: Nonspecific vaginitis. N Engl J Med 298:1429-1434, Jun 29, 1978

## Positive End-Expiratory Pressure

Positive end-expiratory pressure (PEEP) has been available since 1967 as an adjunct to the management of adult respiratory distress syndrome. PEEP is the artificial maintenance of variable levels of positive pressure on expiration and the stopping of the flow of expired air at a pressure above atmospheric. This has become clinically feasible in most well-equipped hospitals because of the wide availability of volume respirators.

Increasing the interalveolar pressure at the end of expiration has deleterious effects on a normal person—the least of which is interference with normal pulmonary circulation, and the worst of which is causing pulmonary rupture. Fortunately, the type of condition in which PEEP is indicated is accompanied by a substantial decrease in lung compliance, and mechanical increase of expiratory alveolar pressure is safe and effective in increasing lung volumes and gas transfer, without major risk of transmission of pressure to pleura and blood vessels.

PEEP is indicated for a patient who has refractory hypoxemia unresponsive to increasing the fraction of inspired oxygen ($FIO_2$). Oxygen toxicity is frequent with an $FIO_2$ above 60 percent and the percentage saturation of hemoglobin begins to fall precipitously below an arterial oxygen pressure ($PaO_2$) of 60 mm of mercury. Therefore, a patient may be considered to manifest refractory hypoxemia if the $PaO_2$ remains below 60 mm of mercury while breathing 60 percent $FIO_2$; in this situation, PEEP should be considered.

PEEP is felt to improve gas exchange by expanding collapsed alveoli, and there is in each patient a level of PEEP which will prove effective in accomplishing this end. PEEP, therefore, should be increased incrementally, usually by steps of 5 cm of water, monitoring arterial gases until there is an increase in $PaO_2$, or until clinical deterioration occurs. An optimal level of PEEP is usually associated with a dramatic improvement of $PaO_2$ as well as sequential improvement in the pulmonary compliance which can be measured at the bedside.

William C. Fowkes, Jr., MD

REFERENCES

Ashbaugh DG, Petty TL: Positive end-expiratory pressure—Physiology, indications, and contraindications. J Thorac Cardiovasc Surg 65:165-170, Jan 1973

Stevens PM: Positive end-expiratory pressure breathing. Basics of Respiratory Disease 5:1-6, Jan 1977

## The Health Hazard Appraisal

Over the past 15 years, the Health Hazard Appraisal has developed from an idea held by Dr. Jack Hall and other clinicians at Methodist Hospital in Indianapolis to a recognized and accepted tool for use by primary care physicians in their practices. The Health Hazard Appraisal uses data on mortality to assist the physician and patient in identifying those factors in a patient's life-style, such as health habits, which have a predictable negative influence on his or her expected length of life. By identifying these risk factors a physician is able to counsel a patient about their predicted effects. In addition, the Health Hazard Appraisal is able to identify and suggest certain achievable changes in the patient's habits to effect a positive change in his or her predicted risk of death or, alternatively, expected length of life.

The Health Hazard Appraisal is initiated by a physician by the completion of a data sheet. This data sheet couples a self-administered history by the patient with certain objective information supplied by the physician, such as blood pressure, weight and level of serum cholesterol. This information is then mailed to one of the Health Hazard Appraisal Centers which submits it to computer analysis. A complete report is returned to the physician for his or her use. The cost varies, depending on which referral center is used, but approximates $10 to $20 per appraisal.

Robert C. Davidson, MD

REFERENCES

Colburn HN, Baker PM: The use of mortality data in setting priorities for disease prevention. Can Med Assoc 110:679-681, Mar 16, 1974

Hall JH, Robbins LC, Gesner NB: Whose health problem? Postgrad Med 51:114-120, Jan 1972

## Treating Homosexual Patients

There is a growing tendency to recognize a special galaxy of knowledge necessary for treating homosexual patients. Homosexual medicine is an important new area recognizing that knowledge of homosexual men and women and their sexual practices and eventual diseases is necessary to properly serve a patient population that is emerging from "the closet" and demanding a more candid relationship with their physicians. So, there is an importance now of being aware of homosexual patients and their "families"—whether a group of friends or a sexually monogamous lover of many years.

Homosexual men and women are as diverse as the population in general—nevertheless, the difference in their sexual preference results in greater vulnerability to sexually transmitted diseases.

Hepatitis B is fast becoming a venereal infection with relatively high morbidity rates and without effective treatments. The disease, which used to be thought of as being caused by hypodermic punctures or blood transfusions, is now more frequently found to be caused by sexual contact. In some studies, up to 90 percent of hepatitis diagnosed in the homosexual population is positive for hepatitis-associated antigens. Also of note is the incidence of hepatitis B surface antibody that is significantly higher in this population, up to 15 percent in some studies.

There has been increasing knowledge gained on another disease related to this population: condylomata accuminata (venereal warts). This is a disease with no effective single therapy except patience and persistance.

The best single help for homosexual patients is education and, in particular, alerting them to an awareness of their bodies, especially self-examinations for early detection of condylomata.

One hallmark of effective condylomata treatment is discovery and early eradication, usually by fulguration. Early detection can be accomplished by frequent, if not daily, self-administered rectal examinations while showering. In the author's practice, this suggestion to homosexual patients has proved to be a highly effective means of accurate discovery of the existence and location of condylomata, or of a recurrence following original treatment.

William J. Kapla, MD

REFERENCES

Kessler DR, Owen WF Jr: What a straight doctor should know to treat gays. Med Economics, Aug 6, 1979, pp 123-134

Ellis WR, Murray-Lyon IM, Coleman JC, et al: Liver disease among homosexual males. Lancet 1:903-904, Apr 28, 1979

Ostrow DG: Spotting and treating sexually transmitted diseases in gay men. Modern Medicine, Jun 30-Jul 15, 1979, pp 42-47

Bell AP, Weinberg MS: Homosexualities: A Study of Diversity Among Men and Women. New York City, Simon and Schuster, 1978

## The Use of the Oxytocin Challenge Test in High-Risk Pregnancies

The Oxytocin Challenge Test (OCT, also called the contraction stress test) is an attempt to duplicate the stresses of labor by inducing contractions and observing the fetal heart response. This test has been widely accepted in the United States as a useful clinical method of assessing fetal well-being in the hazardous intrauterine environment encountered in certain high-risk pregnancies.

The test consists of intravenous administration of oxytocin by an infusion pump sufficient to produce three contractions during a ten-minute interval, and the simultaneous recording of fetal heart rate and uterine contractions using an electronic fetal monitor. When clinically indicated, the test can be carried out as early as in the 32nd week. The test can be done without oxytocin when contractions are occurring spontaneously.

This test is contraindicated in cases of suspected labor before term, vaginal bleeding and cervical incompetence. Relative contraindications include previous cesarean sections or multiple gestation when a premature fetus would compound the survival risk factor.

A positive test result is determined by a fetal monitor recording of late or variable decelerations of fetal heart rate at, or just beyond, a uterine contraction. The pattern should be repeated with most subsequent uterine contractions or with each of three contractions with an interpretable heart rate during a ten-minute period. Positive findings, if not acted on, are associated with a high incidence of fetal death or fetal distress.

A negative test finding is clearly the greatest benefit of the OCT and is observed in about 90 percent of cases. A negative response is interpreted when uterine contractions occur at a frequency of three in ten minutes with no decelerations of fetal heart rate. To maintain surveillance on the uterofetal-placenta unit, a negative test may be repeated at intervals of a week or less.

A suspicious result is shown by definite, but inconsistent, late decelerations failing to persist with most uterine contractions. After a suspicious test result, it is advisable to repeat the test in 24 hours.

The test is considered unsatisfactory if the quality of the recording is technically poor enough to prevent determining whether decelerations are present, or if there are fewer than three contractions in ten minutes.

The test requires 90 to 120 minutes and should be done with meticulous care by trained nursing and medical personnel.

Walter P. Ordelheide, MD

REFERENCES

Farahani G, Vasudeva K, Petrie R, et al: Oxytocin challenge test in high-risk pregnancy. Obstet Gynecol 47:159-168, Feb 1976

Freeman RK: The use of the oxytocin challenge test for antepartum clinical evaluation of uteroplacental respiratory function. Am J Obstet Gynecol 121:481-489, Feb 15, 1975

## Parathyroid Hormone and Calcium Abnormalities

The greater availability of laboratory analyses of chemical fractions of the blood of patients seen by family physicians has made it possible to diagnose hypercalcemia in patients who may not have presented with the clinical features of primary hyperparathyroidism. The parathyroid hormone (PTH) assay is also available and may be added to the battery of tests used in the evaluation of clinical problems.

The specificity of the parathyroid hormone analysis is sufficient to recognize fragments and intact PTH. However, in some 15 percent to 20 percent of patients there is sufficient overlap, in which it is possible to have high PTH production without primary hypothyroid adenoma, parathyroid hyperplasia or parathyroid carcinoma. The source of the ectopic production of the parathyroid hormone in these cases is usually a malignant lesion. The changes noted in hyperparathyroidism, notably hypercalcemia, hypophosphatemia and elevated levels of alkaline phosphatase, as well as the clinical symptoms of debilitation or constitutional signs of a malignant condition, may be extremely important in differentiating the source of elevated PTH. Generally, patients with malignant lesions tend to have higher levels of serum calcium than patients with primary hyperparathyroidism; the PTH levels are lower in patients with malignant lesions in contrast to levels noted in patients with primary hyperparathyroidism; and high levels of calcium, are attained more rapidly than in the chronic and slowly progressive disorder that marks primary hyperparathyroidism.

In the differential diagnosis of hyperparathyroidism, other sources of hypercalcemia need to be considered. These may include, in addition to neoplasms with or without metastasis, multiple myeloma, sarcoidosis, thyrotoxicosis, immobilization in the young, Paget disease, vitamin D intoxication, milk-alkali syndrome, Addison disease and the use of thiazide diuretics.

A workup by physicians in family practice for a patient who has hypercalcemia should include a careful history; complete blood count; studies of sedimentation rate, electrolytes (including serum), magnesium levels, protein electrophoresis and thyroid function; x-ray study of the chest; an intravenous pyelogram, and skeletal survey x-ray studies. When the association among hypercalcemia and hypophosphatemia and increased alkaline phosphatase is noted, and confirmed on repeated examinations, the immunoassay test for parathyroid hormone may be indicated. Additional tests which may be useful include measurement of tubular absorption of phosphate after either calcium or phosphate infusion.

If serum calcium levels are greater than 15 mg per dl hypercalcemia is severe. When the patient is symptomatic, a short QT interval may be noted on the electrocardiogram, and this requires restricted calcium intake, hydration, forced diuresis with furosemide and ethacrynic acid. In long-term management, therapy with steroids may be indicated as well as oral administration of phosphates. Dialysis may be considered in a life-threatening situation in which the use of other measures is restricted. Mithramycin inhibits bone resorption and lowers the calcium level when given intravenously in a dose of 25 mg per kg of body weight.

Patients who have increased calcium levels and no evidence of clinical disease should be observed closely for the development of clinical or chemical abnormalities that may indicate progression of hyperparathyroidism.

Richard Barnett, MD

REFERENCES

Cryer PE, Kissane JM: Malignant hypercalcemia. Am J Med 67:486-494, Sep 1979

Habener JF, Potts JT Jr: Biosynthesis of parathyroid hormone. N Engl J Med 299:580-585, 635-644, Sep 14, 1978, Sep 21, 1978

Collins RD: Disorders of serum calcium, *In* Illustrated Manual Laboratory Diagnosis, 2nd Ed. Philadelphia, J. B. Lippincott Co, 1975, p 32

Bilezikian JP: Hypercalcemia: The changing clinical profile. Resident Staff Physician 22:77-83, Sep 1976

---

*Reprinted with permission from the Western Journal of Medicine, June 1980.*

# Cesarean Childbirth

## SPONSORED BY THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

Assisted by the Office for Medical Applications of Research, NIH

### Introduction

The National Institutes of Health consensus development program brings together bio-medical research scientists, practicing physicians, consumers, and others as appropriate, in an effort to reach general agreement on the safety and efficacy of a medical technology. That technology may be a drug, device, or medical or surgical procedure.

Following consensus meetings, summaries of conclusions and recommendations issued by consensus panels are widely distributed to the research, practicing, and lay communities. All shades of opinion are reflected in those summaries.

At NIH, the Office for Medical Applications of Research (OMAR) is responsible for coordination of the consensus development program. OMAR assists the individual NIH institutes, which sponsor the conferences, in this effort.

A National Institutes of Health Consensus Development Conference, held at NIH September 22-24, 1980, addressed issues that have arisen concerning cesarean childbirth.

At NIH, consensus development conferences bring together biomedical research scientists, practicing physicians, consumers, and others in an effort to reach general agreement on the safety and effectiveness of a medical technology. That technology may be a drug, device, or medical or surgical procedure.

A consensus development task force and members of the audience considered evidence presented on the following questions:

- Why and how have cesarean delivery rates changed in the United States and elsewhere, and how have these changes affected pregnancy outcome?
- What is the evidence that cesarean delivery improves the outcome of various complications of pregnancy?
- What are the medical and psychological effects of cesarean delivery on the mother, infant, and family?
- What economic factors are related to the rising cesarean rate?
- What legal and ethical considerations are involved in decisions on cesarean delivery?

The task force included representatives from the many disciplines involved in cesarean childbirth. Members gathered data for a preliminary report and met following formal presentations and discussions at the conference to assess the issues based on the evidence presented. This summary is the result of their deliberations.

*The rising cesarean birth rate is a matter of concern. The consensus statement reflects the judgment that this trend of rising cesarean birth rates may be stopped and perhaps reversed, while continuing to make improvements in maternal and fetal outcomes, the goal of clinical obstetrics today. The constructive steps that may be taken and goals for further research are recorded herein.*

### I. Why and how have cesarean delivery rates changed in the United States and elsewhere, and how have these changes affected pregnancy outcome?

Many factors have been cited to account for the increase in cesarean birth rates. In the 1960's, coinciding with the decline in the overall birth rate, increasing emphasis was placed on the health of the fetus. With couples having fewer children, even greater attention was given to favorable pregnancy outcome.

---

NIH Consensus Development Conference Summary Vol. 3, No. 6.

EDITOR'S NOTE: For further information about the "NIH Consensus Development Conference Summaries," contact the Office for Medical Applications of Research, Building 1, Room 216, National Institutes of Health, Bethesda, Maryland 20205.

There were societal demands for prevention of death of the fetus and neonate and for improvement in the quality of life for the survivors. The nation's infant mortality rate was used as an international yardstick of the quality of health care, and great emphasis was placed on improving infant survival. Advances in medical care—such as improved anesthetic techniques, blood products and blood transfusions; wider choice of antibiotics for treatment of infection; and better medical control of maternal illnesses such as diabetes, hypertension, and heart disease—all made maternal mortality from cesarean childbirth a rare occurrence. The safer the procedure became, the easier it became to make a decision to perform the operation. Thus, cesarean delivery was one approach applied to try to improve fetal outcome.

Studies suggesting that cesarean birth improved the outcomes of various complications of pregnancy led to increased use of cesarean delivery for certain conditions. Obstetricians came to favor surgical relief of abnormal fetal presentations that formerly required a difficult forceps or other manipulative delivery. The diagnosis of dystocia was made more frequently and more often managed by cesarean delivery. Episodes of fetal distress during labor, more quickly detected by electronic fetal monitoring, were frequently managed by cesarean birth. As the primary cesarean rate rose due to more frequent surgical intervention for these complications, the long-held tenet stating "once a cesarean, always a cesarean" led to a rapid increase in the number of repeat cesarean births as these women delivered subsequent pregnancies.

Some observers have suggested that the cesarean rate has been affected by other factors, such as defensive medicine, financial incentives, and the trend toward specialization in obstetric practice. Moreover, concern has been voiced about the degree to which patterns of residency training have perpetuated the trend. No reliable data exist to assess the extent to which any of these factors may have contributed to the rise in cesarean delivery rate.

### Epidemiologic Data

During the 1970's, the cesarean birth rate in the United States increased about threefold, from 5.5 percent in 1970 to 15.2 percent in 1978, and appears to be continuing to increase. This trend is pervasive, affecting hospitals and patients in all parts of the country.

An increase in cesarean rates is also evident internationally. The Canadian rate has most closely paralleled that of the United States, moving from 7.5 percent in 1972-1973 to 13.9 percent in 1979. In western European nations, cesarean delivery rates are considerably lower than in Canada and the U.S.; however, a trend toward an increase in cesarean delivery is reported in France, England, Norway, and The Netherlands. Other than the increase in Norway between 1975 and 1978, the U.S. has experienced the sharpest increase.

Concurrent with the rise in cesarean delivery rates is an international trend toward greater reliance on medical specialists for management of childbirth. This includes more deliveries performed by osbstetricians as compared with general practitioners or midwives, and better access to a full complement of hospital resources.

In the United States, the diagnostic categories having the largest effect on the increase in the cesarean birth rate between 1970 and 1978 are:

| Indication | % of all Cesareans Done for This Indication (1978) | % Contribution to Rise in Rate |
|---|---|---|
| 1. Dystocia | 31 | 30 |
| 2. Repeat cesarean | 31 | 25 - 30 |
| 3. Breech presentation | 12 | 10 - 15 |
| 4. Fetal distress | 5 | 10 - 15 |

The cesarean birth experience in New York City, an area for which data from birth and death certificates are available to assess changes in methods of delivery from 1968-1977, is consistent with the national data. In addition, along with the rise in cesarean births, there is a trend away from forceps delivery.

Low birth weight is associated with relatively high rates for primary cesarean birth. However, because more than 90 percent of all infants weigh over 2500 grams at birth, the normal birth weight group makes the largest contribution to the number of cesarean births.

The rate of increase in primary cesarean birth in New York City over the decade was similar at almost all birth weights. The incidence of low birth weight decreased both overall and among cesarean births. These changes in incidence of low birth weight run counter to the upward trend in cesarean birth rates.

Neonatal mortality decreased markedly in New York City between 1967-68 and 1976-77. The largest decrease occurred in the group of infants weighing 1000-2500 grams. In this group, both primary cesarean and vaginal births had large decreases in neonatal mortality. These decreases may have been influenced by concomitant improvements in factors such as neonatal intensive care. In births above 2500 grams there was a small decrease in neonatal mortality. No decrease is found in neonatal mortality among all primary cesarean births when allowing for shifts that may have occurred from forceps to cesarean delivery.

## II. What is the evidence that cesarean delivery improves the outcome of various complications of pregnancy?

### Dystocia

The term dystocia encompasses two systems of classification of abnormal labor. The first relates to problems of fetal position or size. The second is less well-defined and includes functional classification of labor with a fetus in the vertex position. The largest contribution (30 percent) to the overall rise in the cesarean delivery rate from 1970 to 1978 came from the diagnostic category of dystocia. Almost all of this contribution is accounted for by the increased frequency of the diagnosis of dystocia. In the New York City data, the diagnosis of dystocia is concentrated among infants with birth weights over 2500 grams, and cesarean delivery is not associated with survival advantage in this group when compared with vaginal births. Adequate data relating to infant morbidity, and specifically abnormal neurologic development, in association with dystocia are unavailable.

Problems of fetal position and size (fetopelvic disproportion) are generally easily recognized; appropriate guidelines for obstetrical conduct in these situations are available; and fetal and maternal outcome effects are reasonably well known. These problems, excluding the breech birth, which is discussed as a separate category, are not a major reason for the increase in cesarean birth rates in the dystocia category.

The functional classification of labor as dystocia with a fetus in vertex presentation is more complex. The ability of the fetus weighing less than 1000 grams to tolerate vaginal or cesarean birth has not been adequately evaluated. Similarly, the fetus weighing more than 4000 grams, when recognized, requires particularly cautious obstetrical management of labor. The remainder of vertex births (over 90 percent) are of normal size fetuses.

#### Recommendations

1. In the absence of fetal distress, management of dysfunctional labor may include such measures as patient rest, hydration, ambulation, sedation, and use of oxytocin, prior to considering cesarean birth.
2. There is a compelling reason to examine the diagnostic category of dystocia because of its prominent association with the increase in primary cesarean birth rate and the absence of a survival advantage for the cesarean births over 2500 grams.
3. Included among approaches to the issue of dystocia should be (1) peer review within hospitals, (2) examination of the efficacy of methods for assessing the progress of labor, with specific attention to infant and maternal mortality and morbidity, and (3) research clarifying the factors which affect the progress of labor including the effects of emotional support, ambulation, rest, sedation, and oxytocin stimulation.

### Repeat Cesarean Delivery

Prior cesarean delivery is one of the two major reasons cited for cesarean birth at this time, and is likely to increase further if present trends continue. This diagnostic category accounted for 25 to 30 percent of the increase in cesarean rate from 1970 to 1978.

Following a cesarean delivery, more than 98 percent of women in the United States undergo a repeat cesarean for any subsequent pregnancy. This practice began in the early 1900's to avoid the risk of uterine rupture at the scar site during labor. At that time the "classical" cesarean incision (a vertical incision in the body of the uterus) predominated, and the cesarean birth rate was extremely low. The incidence of scar rupture is higher in the classical, low vertical, and inverted T incisions, compared with the low segment transverse incision. Following an initial cesarean birth and during subsequent pregnancies and labors, the low segment transverse uterine incision now in general use is associated with lower maternal and fetal morbidity and mortality. With any uterine scar, however, rupture is unpredictable.

Based on maternal and neonatal mortality rates, the practice of routine repeat cesarean birth is open to question. Repeat cesarean carries two times the risk for maternal mortality of vaginal delivery, and the maternal mortality rate for repeat cesarean has not fallen since 1970. At birth weights below 2501 grams, the New York City data show a consistent neonatal mortality disadvantage for cesarean as compared with vaginal births; at birth weights above 2500 grams, cesarean deliveries have the same mortality rates as vaginal births. Data from national and international sources suggest that labor and vaginal delivery after a previous low segment transverse cesarean birth is of low risk to mother and fetus in properly selected cases.

#### Recommendations

1. In hospitals with appropriate facilities, services, and staff for prompt emergency cesarean birth, a proper selection of cases should permit a safe trial of labor and vaginal delivery for women who have had a previous low segment transverse cesarean birth. Informed consent should be obtained before a trial of labor is attempted.
2. No changes in present practices are recommended for the delivery by elective repeat cesarean of patients who have had a previous classical, inverted T, or low vertical incision, or for whom there is no documentation of the site and type of the previous cesarean incision.
3. In hospitals without appropriate facilities, services, and staff, the risk of a trial of labor in women who

have had a previous cesarean may exceed the risk of for both mother and infant from a properly timed, elective repeat cesarean birth. Patients should be informed in advance of the limits of a particular institution's capabilities and of the availability of other institutions capable of offering this service, so that they may make a choice.

4. More adequate information is needed on risks and benefits in trials of labor for patients with previous low segment transverse uterine incisions. Studies designed to provide this information must be of sufficient sample size and include morbidity and mortality information on both mother and infant.
5. Institutions offering trials of labor following a low segment transverse cesarean birth should develop guidelines for the management of those labors.
6. Patient education relating to cesarean birth and repeat cesarean birth should continue throughout pregnancy as an important part of patient participation in decisions concerning anesthesia, elective repeat cesarean birth, or trial of labor following previous cesarean birth.

### Breech Presentation

Breech presentation is associated with an increase in both morbidity and mortality when compared with vertex presentation, irrespective of whether delivery is vaginal or cesarean. There is a continuing trend toward delivery of infants in breech presentation by cesarean. Nationally the proportion of breech presentations delivered by cesarean rose from 11.6 percent in 1970 to 60.1 percent in 1978, accounting for about 10 to 15 percent of the rise in cesarean rate during those years.

In the New York City data, among breech presentations, there is no consistent difference in neonatal mortality at low birth weights (2500 grams or less) between primary cesarean births and vaginal breech deliveries. But, at mature birth weights, breech-presenting infants delivered by cesarean have a fivefold better neonatal mortality rate than those delivered vaginally. The strong qualification, however, is that at birth weights above 2500 grams there has been no overall decrease in mortality over a 10-year period for the total group of breech presentations (vaginal and cesarean combined). This seeming contradiction may reflect a shift of the better risk breech births from the vaginal delivery group to the cesarean birth category. Further exploration of the effect of changes in mode of delivery would require information on infant morbidity and development, not now available.

Evaluation of outcome in breech presentation is complicated by problems related to the increased frequency of prematurity in breech presentations, the different types of breech presentation, congenital anomalies associated with breech presentation, and influence of maternal pelvic size and fetal size on ease of vaginal breech delivery. Maternal morbidity following surgery or difficult breech delivery is a consideration in choosing the method of delivery. Most clinical reviews suggest that abdominal breech delivery may be associated with less risk to the premature fetus, but lack of data on infant morbidity prevents a firm conclusion.

The large fetus presenting as breech, the fetus presenting as a complete or footling breech, and the fetus with marked hyperextension of the head presenting as breech, have a better outcome if delivered by cesarean birth.

**Recommendations**

1. Vaginal delivery of the term breech should remain an acceptable obstetrical choice for delivery when the following conditions are present:
   (a) anticipated fetal weight of less than 8 pounds;
   (b) normal pelvic dimensions and architecture;
   (c) frank breech presentation without a hyperextended head; and
   (d) delivery to be conducted by a physician experienced in vaginal breech delivery.
2. Data are insufficient to make a firm recommendation on the preferable method of delivery for the low birth weight (less than 2501 grams) fetus in the breech presentation.
3. More data should be collected to evaluate the best mode of delivery for fetuses in the breech presentation.
4. Because all breech births have inherent risks that are often uncertain and unpredictable, this information should be shared with the family whenever possible as part of the decision-making process.

### Fetal Distress

Asphyxia during labor, that may lead to brain damage, is the most dangerous clinical correlate of fetal distress. Fetal distress ranks third in importance, along with breech presentation, in the rise of cesarean birth rates, accounting for about 10 to 15 percent of the increase. While evidence is lacking that the actual incidence of fetal distress has changed, the diagnosis of fetal distress has been made more frequently during the past 10 years. The use of electronic fetal monitoring is associated with an increased frequency of diagnosis of fetal distress. The diagnosis of fetal distress occurs most frequently in fetuses weighing over 2500 grams. Fetal distress cannot be reliably explored within the New York City data for risk of mortality in relation to method of delivery because the actual number of affected infants is small.

**Recommendation**

Further studies are needed to improve the accuracy of the diagnosis of fetal distress, and to develop new techniques for making the diagnosis. These advances may be expected to improve fetal outcome and to lower cesarean birth rates.

### Other Maternal and Fetal Considerations

Because of a need for early delivery, many maternal and fetal medical problems lead to cesarean birth. Examples include maternal diabetes, pregnancy-induced hypertension, and erythroblastosis fetalis. This entire group contributes only a small part of the cesarean birth rate increase.

**Recommendation**

If vaginal delivery is to be used in this group, an effective method is needed to stimulate preterm labor safely.

## III. What are the medical and psychological effects of cesarean delivery on the mother, infant, and family?

### Maternal Mortality and Morbidity

Although overall maternal mortality is extremely uncommon (9.9 deaths/ 100,000 births in 1978), cesarean birth carries two to four times the risk for mortality when compared with vaginal delivery. Some maternal mortality following cesarean birth is related to maternal illness rather than to the surgery. Maternal mortality rates are still underreported.

Cesarean birth is a major surgical procedure with morbidity greater than vaginal delivery. Infections constitute the greatest portion of this morbidity. The most common infections are endometritis and urinary tract and wound infections. Morbidity may reflect the demographic features of the population cared for, as well as the events of labor and birth.

**Recommendations**

1. Better data collection is needed to identify the reasons for operative and non-operative maternal deaths.
2. The National Center for Health Statistics should consider revising (1) the standard certificates of birth and fetal death to include items that distinguish between cesarean and vaginal delivery, and (2) the standard certificates of death to include or modify items that improve the identification of maternal deaths. State health departments should adopt similar revisions in certificates of birth and death, and a uniform definition of maternal death.
3. For statistical analysis, maternal death certificates should be matched with the corresponding birth and fetal death certificates.
4. Comprehensive studies of morbidity with respect to cesarean births, vaginal births and forceps births are needed.
5. Delivery of medical care to patients undergoing cesarean birth should be made equal to that available to general surgical patients.

### Anesthesia

Obstetric anesthesia is unique in that it requires attention to the health of at least two patients. Maternal deaths related to anesthesia, although infrequent, continue to occur. Most anesthesia-related deaths are potentially avoidable. Appropriate anesthetic selection and technique can minimize the inherent medical risks, including the risk of maternal death.

There is considerable variation and room for improvement in the number, quality, and availability of obstetric anesthesia services throughout the United States.

**Recommendations**

1. Choices for the kind of anesthesia should be available and discussed among patient, obstetrician, and anesthesiologist. In particular, where not medically contraindicated, the patient should have the option of receiving regional anesthesia.
2. More comprehensive and continuing data collection is needed to determine the training, availability, and quality of anesthesia support systems and personnel for the obstetric patient.
3. Further study of the effects of obstetric anesthesia on maternal mortality and morbidity and the physiology and conduct of labor is required.
4. The short and long term effects of anesthetic drugs and techniques on the neurobehavorial development of the newborn are poorly described in the existing literature. Understanding these effects is critical to an evaluation of benefits and risks to infant development, and they warrant further study.

### Neonatal Respiratory Distress Syndrome

Cesarean birth, particularly in the absence of labor, appears to be associated with an increase in neonatal respiratory distress at all gestational ages. Iatrogenic neonatal respiratory distress due to premature termination of pregnancy should be avoidable by appropriate antenatal use of clinical, biophysical, and biochemical estimators of gestational age.

Among fetuses with lungs previously demonstrated as mature, postnatal respiratory distress is unlikely to be a problem, whatever the route chosen for their delivery.

**Recommendations**

1. Continuing efforts to avoid iatrogenic prematurity are needed. There must be improvement in professional and patient education regarding the necessity for safe and effective antenatal assessment of gestational age and fetal maturity before elective intervention in labor and delivery.
2. Further studies are needed of the influence on neonatal pulmonary function of events surrounding labor and delivery.

### Psychological and Developmental Effects

There is limited research concerning the psychological impact on parents following cesarean birth. Nevertheless, surgery is clearly an increased psychological and physical burden when compared with a normal vaginal delivery. In addition, negative responses from mother and father have been reported in the available retrospective studies. In some hospitals, family centered maternity care has been extended to the cesarean birth family, and in these cases there is no evidence of harm to mother, neonate, or father. The presence of fathers in the operating room and closer contact between mother and neonate appear to improve the post-cesarean behavioral responses of the families. One consistent finding from small scale studies of post-cesarean birth families is the greater involvement of fathers with their infants. Improved educational programs for all families so that they may understand the cesarean birth, and specific educational programs for previous cesarean birth families, are methods to improve the birth experience.

Comparative studies of the influence of cesarean birth on infant development often lack a statement on the obstetrical indications for cesarean birth or whether the father was present in the delivery room. Several studies have noted that, although the infant delivered by cesarean has usually received more medication than a control infant delivered vaginally, assessments of neonatal behavior did not reveal depressive effects. Virtually no differences associated with delivery mode have been found in the few reports available on infant development beyond the neonatal period. The published studies in this field are often inadequate in study design and incomplete in infant followup.

### Recommendations

1 Parent education during pregnancy by health care providers and in childbirth education classes should include information relating to the possibility of a cesarean birth, an explanation of the technical procedures surrounding the cesarean birth, and discussion of choices available to parents.
2. During labor and at the time a decision to perform a cesarean is made, as time and circumstances permit, a discussion of the indications, procedures, and parental options should take place between the physician or his/her staff and the parents.
3. Information exchange about the entire cesarean birth experience should continue in the postoperative period and at later postpartum visits.
4. In the absence of scientific evidence regarding benefit or risk, the presence at a cesarean birth of the father or surrogate should represent a joint decision among parents, physician, and hospital representatives.
5. Hospitals are encouraged to liberalize their policies concerning the option of having the father or surrogate attend the cesarean birth.
6. The healthy neonate should not be separated routinely from mother and father following delivery.
7. There is a need for longitudinal developmental followup studies of infants and their parents. These studies should include study populations of sufficient size for meaningful statistical analysis, suitable control groups, and standardized methods of assessment.

## IV. What economic factors are associated with cesarean births?

The medical cost of delivery by cesarean birth is generally higher than that of vaginal delivery. The available evidence does not permit a precise assessment of the value of health care resources that would be saved by avoiding a cesarean birth.

These additional medical costs can only be assessed in relation to their benefits to both infant and mother. At present, information on benefits, particularly those relating to morbidity and development of the infant, is inadequate to allow their comparison with cost.

Historically, financial incentives to patients both for and against cesarean delivery have existed. In women lacking health insurance, an additional financial burden is imposed by the cesarean birth. Conversely, the structure of many employer-sponsored health insurance plans, where coverage of normal deliveries has been limited, has given financial advantages to the cesarean birth. This latter incentive is disappearing due to a 1979 change in civil rights legislation. Evidence on the effect of these incentives on cesarean birth rates is insufficient.

Financial incentives to physicians both for and against the performance of cesarean birth may exist. In some cases, the higher fee paid for cesarean delivery may not be justified by greater effort or time. In other situations, for example, in the case of family practitioners who must refer patients to a specialist for cesarean delivery, incentives against a cesarean birth may exist. Evidence on the effects of physician incentives on cesarean birth rates is limited and conflicting at present.

### Recommendations

1. Although it would be useful to know how the medical benefits of cesarean birth compare with its costs in various situations, until these benefits can be better defined and measured, no recommendation can be made to conduct economic evaluations to address this issue.
2. Research is needed into the nature of economic incentives for and against cesarean birth and into the effect of these incentives on the behavior of physicians and patients.

### V. What legal and ethical considerations are involved in decisions on cesarean delivery?

### Legal Concerns

Malpractice suits may be brought against a physician for negligent performance of a cesarean, for not performing a necessary cesarean, or for performing an unnecessary cesarean. Of major concern is the malpractice suit for negligent nonperformance of an allegedly necessary cesarean. The physician defendant is successful in most of these cases. Liability, when found, generally involves gross deviation from the recognized standards of patient care. Appropriate application of the doctrine of informed consent by providing a patient sufficient information to make a knowledgeable treatment choice is protective for the physician. The law also deems the rights of the unborn child worthy of protection. Although commonly cited, there is no evidence that fear of litigation and the possible consequent practice of defensive medicine is a major cause of the increased cesarean birth rate.

#### Recommendations

1. The courts should recognize that if a vaginal delivery resulted in a "less than perfect" baby, this does not necessarily mean that the physician was negligent for not performing a cesarean birth.
2. Physicians should make a determination as to the need for a cesarean delivery based solely on sound medical judgment.
3. Physicians should support the patient's right to participate in the decision-making process concerning whether to have a cesarean by proper application of the doctrine of informed consent.

### Ethical Concerns

The ethical principles associated with cesarean birth are generally not specific to this procedure. They correspond to established patterns governing relationships between health care providers and their patients. They are consistent with providers' traditional commitment to giving patients' interests priority over their own; they acknowledge the right of patients to make informed decisions regarding their own bodies, including the right of proxy consent; they recognize the independent rights of the unborn relative to those of the mother; and they take into account the special needs and concerns of teaching institutions and the ethical difficulties involved in achieving distribution equity in health care.

#### Recommendation

Further studies are needed to discover whether the increase in cesarean delivery rates in fact represents a violation of any of these general principles.

### Research Needs

Throughout this consensus statement, recommendations appear for the development of new data and research studies. The task force has found at all stages of its assessment of problems and issues related to cesarean childbirth that evidence to reach hard conclusions is often not available. In part, this may be due to the complexity of the subject; in part it may be due to the lag in developing information that identifies the critical questions needing intensive investigations. The epidemiologic analysis of the national and New York City experiences has clarified many of these issues. There is a need for data similar to New York City's for other population groups. However, it is urgent that studies that have the potential for more effectively answering questions concerning the reasons for and efficacy of cesarean birth be conducted. This will require a range of different methodologies, including well designed medical record-based sources of information, interview surveys, case control studies and randomized clinical trials.

Randomized clinical trials are difficult, time consuming, and expensive. However, in certain circumstances, they offer the only way to address problems definitively. The question of ethics is often raised as an obstacle to the conduct of randomized trials for procedures or managements which are already routine, whether or not they are established. However, failure to conduct feasible randomized trials in the case of clinical practices whose efficacy is not established and is being persuasively challenged, raises ethical issues of greater concern.

Another area of necessary research focus is that of physician practice. The effects of medical training, hospital policy, and ethical and legal concerns on the choice of delivery procedure are currently unexamined subjects deserving greater scrutiny by means of a combination of epidemiological, economic, and social science methods.

Most issues of pivotal importance concerning cesarean birth will require longitudinal infant evaluation. Such studies are expensive and logistically difficult, but they should be regarded by funding agencies as high priority areas.

---

*This conference was sponsored by the National Institute of Child Health and Human Development, in conjunction with the National Center for Health Care Technology and with the assistance of the Office for Medical Applications of Research, NIH. Major information sources used by the Task Force included a complete bibliography of the world literature since 1966 relating to cesarean births provided by the National Library of Medicine; some yet unpublished studies made specially available; data from government officials and professionals in Canada and Western Europe; national data on cesarean births from the National Center for Health Statistics; information from the Public Health Service, Indian Health Service, and the military services on their cesarean delivery rates; data from the Professional Activity Study of the Commission on Professional and Hospital Activities on the method* *of delivery employed when various complications of pregnancy were diagnosed in the years 1970, 1974, and 1978; and New York City birth and death record data for the years 1968-1977. Copies of the full report of the Task Force, containing a description and analysis of the literature and data on which this statement is based, may be obtained from the Office of Research Reporting, NICHD, Building 31, Room 2A34, NIH, 9000 Rockville Pike, Bethesda, Maryland 20205.*

---

Members of the Task Force were: Mortimer G. Rosen, M.D., Chairman, Department of Obstetrics and Gynecology, Cleveland Metropolitan General Hospital, Case Western Reserve University, Cleveland, Ohio; Milton H. Alper, M.D., Department of Anesthesia, Boston Hospital for Women, Harvard Medical School, Boston, Massachusetts; Randall Bloomfield, M.D., Department of Obstetrics and Gynecology, Kings County Hospital Center, Brooklyn, New York; Robert C. Cefalo, M.D., Ph.D., Department of Obstetrics and Gynecology, University of North Carolina Medical School, Chapel Hill, North Carolina; Tiffany Field, Ph.D., Departments of Pediatrics and Psychology, Mailman Center for Child Development, University of Miami School of Medicine, Miami, Florida; Jeanne Guillemin, Ph.D., Department of Sociology, Boston College, Chestnut Hill, Massachusetts; Robert B. Hilty, M.D., Obstetrician, Kettering Medical Center, Dayton, Ohio; Melita Jordan, C.N.M., Department of Obstetrics and Gynecology, Pennsylvania Hospital, Philadelphia, Pennsylvania; Barbara F. Katz, J.D., Associate Counsel, University of Massachusetts, Boston, Massachusetts; Luella Klein, M.D., Department of Obstetrics and Gynecology, Emory University School of Medicine, Grady Hospital, Atlanta, Georgia; Nicholas M. Nelson, M.D., Department of Pediatrics, Pennsylvania State University, Hershey, Pennsylvania; Diana Petitti, M.D., Department of Medical Methods Research, The Permanente Medical Group, Oakland, California; Jack W. Provonsha, M.D., Ph.D., Professor of Christian Ethics, Loma Linda University, Loma Linda, California; Sam Shapiro, Health Services Research and Development Center, The Johns Hopkins Medical Institutions, Baltimore, Maryland; Elizabeth L. Shearer, M.Ed., M.P.H., C/SEC, Inc., Chestnut Hill, Massachusetts; Michael A. Simmons, M.D., Department of Pediatrics, Johns Hopkins University, School of Medicine, Baltimore, Maryland; Judith Wagner, Ph.D., Senior Research Associate (Economics), Urban Institute, Bethesda, Maryland; S. Annette Warrenfeltz, M.D., Family Physician, Waynesboro Hospital, Waynesboro, Pennsylvania; Peggy J. Whalley, M.D., Department of Obstetrics and Gynecology, University of Texas, Southwestern Medical School, Dallas, Texas.

---

## Maryland Develops Early Clues of Impairment

At its last annual meeting, MED-CHI's Committee on Physician Rehabilitation presented *signs and symptoms* that enable the practicing physician and his family to recognize physician impairment. It is hoped that colleagues and family members will intervene early in order *to hasten the physician's recovery.* The "guidelines" were adapted from the Medical Association of Georgia program.

The entire October 1980 Maryland State Journal was devoted to the issue of impairment, including articles on the role of auxiliary, medical education, alcoholism, emotional illness and research.

Copies are available for $2.00 from MED-CHI, 1211 Cathedral Street, Baltimore, MD 21201.

### Physician Rehabilitation—Early Clues of Physician Impairment

**Personal Status**

- Poor hygiene and appearance
- Multiple physical complaints and illnesses
- Many prescriptions for self and family
- Frequent ER visits and hospitalizations
- Frequent accidents
- Personality and behavior changes
- Inappropriate tremulousness or sweating

**Office**

- Workaholic early
- Disorganized schedule
- Unreasonable behavior
- Inaccessible to patients and staff
- Excessive drug-use prescriptions and supply
- Patient complaints
- Frequent office absences
- Decreased workload and tolerance

**Employment Applications**

- Frequent job changes or relocations
- Unusual medical history
- Vague letters of reference
- Inappropriate qualifications

**Hospital**

- Often late, absent or ill
- Decreased work/chart performance
- Inappropriate orders
- "Hospital Gossip"
- Unavailability
- Heavy drinking at staff functions

**Home and Family**

- Behavior excused by family and friends
- Drinking activities come first
- Fights, arguments and violent outbursts
- Sexual problems
- Withdrawal and fragmentation of family
- Financial crisis
- Children neglected, abused or in trouble
- Separation or divorce

**Friends and Community**

- Personal isolation
- Embarrassing behavior
- Drunk driving arrests
- Legal problems
- Neglected social commitments

Table reproduced with permission from *MD State Journal* *29*(10): 39, 1980.

—*AMA Impaired Physician Newsletter,* January 1981

# Medicine and Me

## MORRIS B. ABRAM

My several hematologists, consulting oncologist, and immunotherapist have among them treated thousands of cases of acute myelocytic leukemia. They know the telltale signs of the disease in the peripheral blood and bone marrow. When they first became acquainted with me in June 1973, they no doubt looked on my prospects as bleak, and statistics supported them.

### Prologue to Bad News

I was enjoying near-perfect health when I finally nailed down my friend and elusive family physician for a date for a complete physical examination. The date picked was my 55th birthday, June 19, 1973. My complaint was mainly slight dizziness as I arose from a long sit in a rocking chair from which I worked in my office.

Dr. Ashman, chatting over his paintings and sculptures, which proclaimed his growing preference for his avocation, seemed not a bit disturbed after a thorough examination. He dismissed me as he had many times before, but with an exception: He would call me when his laboratory had the results of my blood examination.

I gave the matter no further thought and returned to work. Reflecting later, I realized I had been through a very hard year: repeated colds lingered on through the winter; phlegm and hacking coughs would not go away. I attributed all this to the immoderate number of cigars I was then smoking.

The persistent colds (or flu) were not the cause of the visit to Dr. Ashman. He was asked to do a routine annual physical which, in fact, had been delayed one year. So, when he called in two days, I was astounded by his cautious phrasing: My hemoglobin, which stood at 16.9 Gm. in 1972, was down to 11.6 Gm. Something was wrong, he said, either the laboratory had made a mistake, or I was ill. Would I get a new complete blood count. Since I was then on my way to Atlanta, I agreed to have the tests made there. Meanwhile, I reviewed all that I might have done to contribute to this fall in hemoglobin. I had experienced almost daily headaches, for which I swallowed at least 60 gr. of aspirin daily. I knew aspirin affected platelets, the clotting component of the blood. Why could aspirin not also affect hemoglobin? I gave up aspirin and have never let one pass my mouth since.

In Atlanta, I had a blood sample taken. The hemoglobin was now up to 12 Gm. I was relieved, and when back in New York City, sent the Atlanta report by hand to Dr. Ashman. He called in minutes: "Would I keep an appointment with a hematologist the following morning at 9:00 A.M.?"

### The Dread Sentence

The hematologist took a bone marrow specimen. I arose from the table and went to my office, still unalarmed by this peculiar course of events. Then a day later, Dr. Ashman called in detectable anguish: Could he see me at the close of the day? "Yes," I answered. "Six o'clock?" he asked, I said, "Sure, what's wrong?" "We'll discuss it when you're here," he responded. Instinctively I asked, "Do I have leukemia?" (My God, where did that word come from?) No person to my knowledge in my entire family had ever had a cancer. Dr. Ashman said, "We'll discuss the matter at six o'clock." The hours went slowly while I felt impending doom.

My reaction to the dread diagnosis "acute myelocytic leukemia" was terror, mixed with disbelief. Dr. Ashman had seemed as shaken as I. He obviously had a dreadful reluctance to pronounce the fatal sentence on his friend. But now he had done it face to face so that the agony and passion could be shared. The disease was fatal. One died of infection. The time left was unpredictable but minimal. Was there any cure? Chemotherapy is the current treatment. It was a crude, painful horrendous therapy which Dr. Ashman obviously regarded as palliative and more likely to make the days remaining intolerable than it do anything constructive. He had repeated several times: "These chemicals are dreadful poisons," and he made it clear

---

MORRIS B. ABRAM, Esq., Partner—Paul, Weiss, Rifkind, Wharton and Garrison, New York, N.Y. Former President, Brandeis University. Chairman of the President's Commission for the Study of the Ethics of Medicine and Biomedical and Behavioral Research.

*Reprinted with permission of the author and THE ART OF MEDICATION, New Rochelle, New York; Vol. 1, No. 1, September 1980.*

*Published under a grant from Roche Laboratories, Division of Hoffmann-La Roche Inc.*

that they affected the whole body, not just the diseased tissue.

My recent contact with leukemia patients confirmed everything Dr. Ashman said. An Atlanta law partner had lost his wife a few years ago; a New York partner had lost his wife a year later; a college friend in Atlanta had recently died, and earlier my tutor from Oxford University, one year older than I, had died in his 40s after a month's bout with leukemia.

### The Decision to Fight

Despite these statistics, in the face of Dr. Ashman's gloom, I resolved that night of diagnosis that I would not yield; I would not die. I would seek the most aggressive help available, offer to do whatever was suggested, and take the chance, however small it may be, of life over lingering death.

I put myself in the care of Dr. Louis Wasserman, senior hematologist, and his associate, Dr. Janet Cuttner, of Mount Sinai Medical Center. I requested a consultation, and Dr. Wasserman brought in his newly arrived colleague, Dr. James F. Holland, the Chief of Oncology.

### Remission Induction

The treatment for acute myelocytic leukemia prescribed in my case was a new protocol. I did not know at first, but I soon understood that my doctors were not attempting to temporize and suppress this mortal enemy but to destroy it without at the same time killing me. I gladly signed every kind of waiver after the most elaborate and informed consent was obtained. I was told of the threat posed by chemotherapeutic drugs to my heart, liver, and other unspecified organs.

A fairly new drug, daunomycin, a reddish horror of the antibiotic family developed in Italy, was characterized as especially dangerous. I soon discovered its power when a few drops leaked into the tissues instead of being flushed into the bloodstream through the veins. My right arm to this day bears the scars of its dreadful potential to do harm as well as good. On three occasions quantities of this liquid, which resembled the color of the red clay of my native Georgia, were pushed into me while, for 24 hours a day for 7 days, cytosine arabinoside, another chemical, which looks inviting to dividing leukemic cells but which does them in when tasted, was driven through my veins.

Intermittently, the receiving vein would collapse, or the needle or lines would become clogged, or irritation would require an injection in a new vein or a new site.

Then, after a few days fever developed. I was now almost totally without resources (white cells) to fight disease. So, another intravenous setup was established in the then free arm, and a continuous flow of powerful antibiotics was dripped into my bloodstream while the doctors took frequent samples of my blood in an attempt to culture and identify the presumed infection. (None ever was pegged.)

From the first, I was determined to keep up muscle tone and my own spirits by jogging, even though it meant taking with me on their rollers my stands, bottles, and tubes through which the needles were attached to me. I was a peculiar sight when I was running down the corridors with one stand; later I had two.

I cannot fully explain why I expected to survive the hospital stay. While they thought I was asleep, I overheard my physician-brother discuss with one of my doctors what they agreed was a very controversial issue: "Whether it is better to let the patient go, or inflict the horrors of chemotherapy in the face of lugubrious statistics of so many failures or very short-run successes." I pretended sleep, since I was resolved to answer the question affirmatively for myself. The daily routine seemed bearable when measured against those special days, of which I usually received advance warning, giving me time to fret and worry about the bone marrow tests.

### Crisis

For two weeks, I endured the hospital regimen as I watched fall materialize in Central Park, visible from my windows. I hoped so much to be released someday just to toss the baseball or football to my 11-year old boon companion, Josh. He visited me often, but averted his eyes from my bottles and bandages and looked at that park scene with, I thought, the same hopes.

Then on the eve of the third week, I knew I was in crisis. I was weakening; I had blood clots around my gums; my hair was coming out in globs; and the fever was unabating. My family had materialized from all corners. I was moved to another floor. My private duty nurse on that particular Sunday put on her hat and ran to the pharmacy to get a prescribed drug herself. Finally, plastic bags of red cells, which looked like solidified blood that had been run through a blender, were transfused into my body growing white and steadily more weary. Then came the bags of platelets, the cells which cause clotting. These, which resembled liquefied raw pork, were to replace the billions destroyed by the chemotherapy and whose absence was causing hemorrhages in my mouth, and God knows where else. So, on or about the 30th of September, I was being kept alive by other people's red cells and platelets, by antibiotics, and by luck that no infection had appeared which was mortal.

The worse things were, however, the more optimistic I became; for I now was beginning to comprehend the theoretical magic of the treatment and could hope that in 1973 chemotherapy might in my case succeed despite the parlous record that every person I had known with my disease had uniformly fatal results. These doctors of mine now had support systems available which made it possible, with my freely bestowed consent, to go for broke.

Until blood components such as red cells and platelets could be separated and transfused in measurable quantities, the volume of whole blood required to sustain life might have destroyed other delicate balances. Without powerful antibiotics, the almost total elimination of white cells would have put the patient at too great a risk. In short, as open heart surgery had to await the development of suitable support systems, including anesthesia, so did radical therapy for acute myelocytic leukemia. Today, five years later, the support systems are, I understand, another generation advanced. Laminar flow chambers maintain defenseless patients in virtually germ-free environment and even packs of white cells can be taken from whole blood and transfused.

But in the fall of 1973, without a laminar flow chamber or transfused white cells, I lived for the day when regenerated bone marrow could produce cells of its own—hoping, even attempting sometimes to pray, that the fresh white cells would be normal—in short, for the remission of leukemia.

## Stay of Death Sentence

In the middle of the first week of October, another bone marrow test was ordered. No one said or treated it as anything but routine. Indeed, one of my junior physicians had warned me that it was not likely that one course of chemotherapy would induce a remission. The day of this bone marrow test was like all other days in the hospital, except that it was worse for this procedure, awful in contemplation, painful in execution, and now I was plain weary of the whole business. The only doctor I now cared to see was a Mt. Sinai psychiatrist who came for a few minutes almost every day.

That bone marrow test was done early in the morning. At 1:00 P.M., Dr. Janet Cuttner, Dr. Wasserman's chief associate, came almost twinkling into the room. She burst out: "The megakarocytes are back." I had no idea that the megakarocytes were precursors of platelets, but the way she sounded and the cheer in her face made me think: "The swallows have returned to Capistrano." She continued, "The bone marrow looks excellent. You are in remission." "When can I leave?" I asked. "By the end of the week," she said.

I was past elation, and I immediately resolved to advance the date of release. I got up, walked, jogged, and otherwise displayed my good condition to all who would look and who had anything to do with my discharge.

On October 5 I left the hospital—two days earlier than the doctors had originally planned—at my insistence. I went out the door, chased a taxi, and with my present wife, went home. Josh soon joined me, and that very afternoon we went to the park and tossed a baseball. On the weekend, we went with friends up to Pawling, New York, and played touch football on the grounds of the local YMCA. I was weak, but I was happy.

## Maintenance Regimen

The next week my doctors began to discuss something with me without the slightest advance warning—the course of treatment postrelease. I was to return to the hospital in ten days for the first of continuous courses of "maintenance therapy," consisting of lesser doses of cytosine arabinoside, accompanied by some other chemotherapeutic drug, given in rotation. The first maintenance dosage would consist of cytosine arabinoside, to be administered intravenously morning and night for five days, plus thioguanine, three pills of which would be taken morning and night on each of those days. Then I was told that monthly thereafter I would receive intravenously cytosine arabinoside morning and night for five days and in rotation cytoxin (intravenously), lomustine (CCNU), and then daunomycin. The routine thus prescribed would continue for a period for which no time limit had been set.

This was quite a shock, but nothing would douse my enthusiasm at the prospect of release. Meanwhile, I had heard from a good friend of the development of a general immunotherapy agent used in Hebrew University Hadassah Hospital, Jerusalem, in patients with remission of leukemia. The developer of the drug, methanol extract residue (MER), was David Weiss, a friend of my friend. The drug had never been used in this country, but the results, as reported by Dr. Weiss, had been promising. I asked my doctors about MER and was told that at the moment they had not used it, and they were not yet prepared to recommend it. In any event, it had not been approved by the appropriate authorities for use in this country.

I had independently heard of the use of cobalt-treated leukemic cells as a specific immunologic agent for leukemia by an English investigator. My doctors advised me that this was not available in this country. However, Dr. Holland did tell me that at Roswell Park, Buffalo, New York, he and Dr. George Bekesi, an immunotherapist, had used neuraminidase-treated leukemic cells for the same purpose as the English physician employed the cobalt-treated cells. However, Dr. Holland did not then have in place either the apparatus or the team necessary to use this therapy on me. He expected that it would be available but could not tell me when.

In the early spring of 1974, Dr. Holland and Dr. Bekesi began to treat me with a combination of MER and neuraminidase-treated leukemic cells, in addition to the chemotherapy received from Dr. Wasserman and Dr. Cuttner. The chemotherapy soon began to make me nauseous, but it was continued, suppressing, of course, the immunologic system which was receiving a general recharge by MER and a specific build-up against leukemia by the neuraminidase-treated cells. The two systems of treatment theoretically worked in opposition; but who can quarrel with the good result? In the years following remission-induction, I have had three bouts with hepatitis and two liver biopsies. My liver has been battered enough so that I never touch a drop of alcohol. I am very cautious about taking any medicine which has to be metabolized in the liver. In each case I weigh the benefit of the drug against the downside risk.

### A Balancing Act

As time passed and the disease did not reappear, I grew tired of this unpleasant bimonthly chemotherapy. Still, who wished to quarrel with success, particularly when no one knows what has produced it? Nevertheless, in September 1976, I wrote my several doctors a letter which stated the issues as I then saw them, mainly in the form of questions:

*1. To what extent, if any, has chemotherapy impaired my immune system?*

*2. If the answer to No. 1 is reassuring, is it likely that the benefits of continued chemotherapy will eventually be less than the benefits of a relatively unsuppressed immune system?*

*3. Is there any evidence from periodic bone marrow examinations that between chemotherapy treatment the "blasts" increase? If so, can my natural defenses, particularly fortified by immunotherapy, take care of any problem?*

*4. Is there any evidence that chemotherapy is suppressing the "blast" formation? If so, what evidence?*

*5. What are the relative dangers of relying on chemotherapy combined with immunotherapy, as opposed to the sole reliance on immunotherapy:*

*(a) If I should fall out of remission, what are the risks given the state of chemotherapy art and my previous response to remission induction therapy?*

*(b) If chemotherapy does any appreciable harm to my immune defenses, am I really better off with this dual therapy?*

*6. You speak roughly of a 5-year remission as a base line for a favorable prognosis. Assuming even this to be true, is the 5-year period a realistic minimum for the continuation of chemotherapy?*

I ended the letter leaving, of course, the final decision with my doctors:

*I want you to realize that I am not trying to second guess any of you whether or not to continue chemotherapy. Of course, I would like to get out of it, but not if I am assuming any severe risk. On the other hand, it may be debatable whether chemotherapy at this stage is doing anything for me; or it may be doing the trick.*

Dr. Cuttner replied that after a full discussion, the group's opinion was that I should continue in maintenance until I had been in remission for at least five years. That meant I had six months to go.

### Remission from Treatment

In mid 1976, I was taken off MER. Maximum results had been achieved, and my immunologic system might become over-saturated through continuous injections of this powerful stimulant. In December of 1977, I was removed from all chemotherapy. In January 1978, I received my last course with neuraminidase-treated cells. I am now flying on my own and am well passed the magical 5-year date.

### Why Have I Survived Leukemia Thus Far?

It is a matter of note, if less than a miracle, that I survived clinically free of acute myelocytic leukemia for more than 5 years. Of course, I had contemplated at the oddest hours and in the most unusual places the reasons for my good fortune. Since none of the distinguished and caring physicians who treated me have a complete explanation on which they can all agree, I do not feel presumptuous in expressing my own ideas: I owe my life first to the advances in chemotherapy; its aggressive use by my physicians, and, of course, my willingness to submit to the risks and hazards. My chemotherapists have been as wise as they have been aggressive. They have monitored with great skill the effects of these powerful and deadly drugs, avoiding what was needed and administering what I could endure.

Next, the immunologic suppressive effects of the chemotherapy have been counterbalanced by a brilliant combination of immunotherapies which have made my body resistant not only to stray pathologic cells but also to germs and viruses. I have been unusually free even of colds and other common infections.

Also, I have had good luck. When I lay in mortal peril during remission-induction totally defenseless, I was spared the invasion of deadly germs.

Finally—and I cannot emphasize this enough—I had the will to live, and the love and support of my wife, Carlyn, and my family. There was never a day that my wife shared the conviction of others that I would not survive, and she communicated in every way to me her confidence. Neither my wife nor I ignored the peril, nor was I afraid to face death. But, I was not willing to go readily into that dark night. If death claimed me, it would have to find me and drag me to its lair.

Here then is one grateful man and patient—grateful to the advances in science, to the developers of new drugs, and grateful, too, to the daring doctors and the brave patients who preceded me. Let no one use drugs heedlessly. Yet, the advance of medical science requires that after the test of drugs on animals, their effectiveness and effect must be demonstrated on the human subject. My choice was inevitable.

# Advanced Internal Medicine (AIM)

## The Training Program in Primary Care Internal Medicine at the University of Connecticut School of Medicine

FRANK DAVIDOFF, M.D.

> *Looking at the system (where I am now) and the training in ambulatory medicine it offers, I can see the void the AIM program filled very well. . . . The training and role models gave me the confidence to believe that general internal medicine is as worthy of respect as any other area of medicine. No one here believes that. Everyone says it's true but no one believes it. The generalists don't fight with the specialists, they talk in low voices in corners. The house staff doesn't even know what a good generalist is.*
>
> *I am setting up a longitudinal resident clinic here. I'll model it after UConn's. They think I'm a star for thinking of this clinic even though I keep telling everyone I'm only doing what I'm accustomed to. Many things I took for granted are radical departures from the status quo.*
>
> —Letter from a former UConn AIM Resident, currently working in another state. April, 1980.

The Advanced Internal Medicine (AIM) Residency began at the University of Connecticut in July, 1976. Now, we wish to examine the experience and to pass in review its accomplishments and weaknesses.

### Rationale

In planning this residency, we took the position that the "traditional" training in general internal medicine is not optimal preparation for a career in primary care internal medicine, either as it is practiced today or is likely to be practiced in the next quarter century. The traditional program generally includes 24 months of "meaningful patient responsibility" on acute, inpatient hospital services, plus another 12 months taken as a kind of "smorgasbord" selection of specialty elective rotations. Apart from providing eligibility to take the certifying American Board of Internal Medicine examination, the content and experience in such programs have not developed in response to a clear rationale, or to the real needs of practicing internists. The reasons for the evolution of the traditional residency are undoubtedly many and complex, and must include the pressures within hospitals and academic departments to cover service needs. Preoccupation with the acutely and catastrophically ill during training has not reflected the realities of daily internal medicine practice which is largely ambulatory, perhaps because of the continuing intellectual and emotional gap between academe and the practicing physician.

Whatever the exact developmental factors, it has appeared to many educators in internal medicine that the residency could well be restructured to include a number of important missing elements. At the same time, we wanted to avoid losing the depth and power of the traditional residency, or repeating errors of history by overextending training into unnecessary or unrealistic areas. In response to this sort of thinking, some 138 primary care internal residency "tracks" have developed throughout the country.[1]

### General Concerns in Planning the AIM Program

Most new programs, ours included, have taken the commitment to ambulatory care medicine as their first concern, an approach primarily dictated by the simple observation that most internists in practice spend most of their time attending to patients in the office, devoting only a small fraction of their time and expertise to their hospitalized patients. To be sure, this reasoning, applied in the extreme, would create lack of ability to care for more seriously ill patients. As an analogy, if lifeguards in training strictly followed the same rationale, most of their time would be spent learning to put on sun-tan lotion. However, the opposite position, which holds that the skills needed in office work are so simple that, once launched into practice, they are easily and adequately picked up on the job, appears to be equally flawed, and certainly merits re-examination. The knowledge and skills required for truly efficient and effective office practice are quite different than those needed for inpatient work. They are at least as complex, and in some ways more difficult to apply; for example, the office patient who has left for home can't be rechecked as easily as the inpatient. Time to upgrade and review ambulatory care skills becomes increasingly difficult to set aside as a practice grows

---

FRANK DAVIDOFF, M.D., Program Director. Chief, Division of General Medicine, University of Connecticut School of Medicine, Farmington, CT.

and becomes busier. Learning to "do the simple things well" in ambulatory care thus takes on particular importance during the residency.

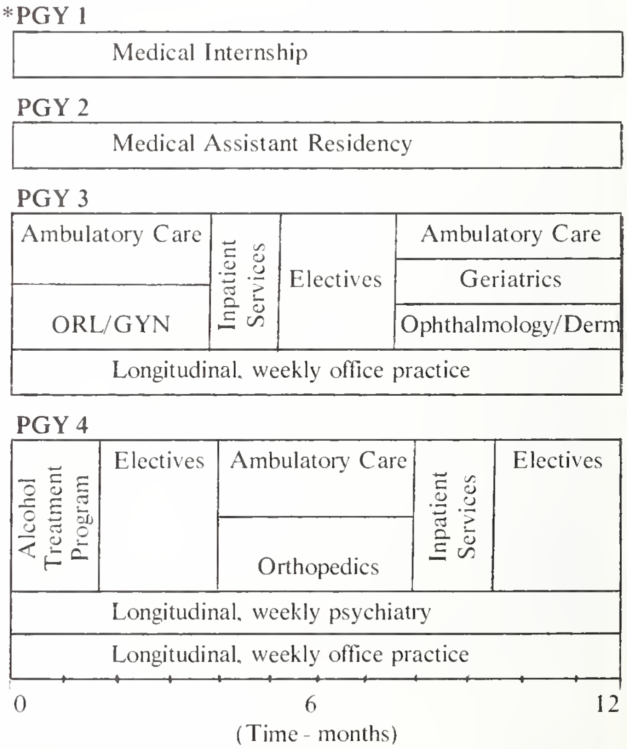
The second major goal is to provide the resident with a core of essential knowledge and experience in six areas outside of internal medicine: otorhinolaryngology, ophthalmology, orthopedics, dermatology, gynecology, and behavioral/emotional medicine (psychiatry). The point here is not to make an expert of the resident in these areas. On the contrary, the goal is to permit the resident to do a proper evaluation, to handle well those basic problems by him/herself for which referral is not really needed, and to know when to refer. These areas are chosen because of the frequency and importance of the problems in those disciplines which present to internists. Surgery, obstetrics and pediatrics are explicitly not included, for several reasons: realistically, we expect that most of the general internists whom we train will be practicing in areas of the country where colleagues with these skills are available. In addition, curriculum time is precious in a residency. Choices must be made, therefore, and our choice has been to increase the depth of training in fewer areas rather than to dilute the experience by adding additional ones of questionable value. Moreover, the proper practice of surgery and obstetrics is now more complex than it was even 25 years ago. We cannot hope to do justice to the new skill and professionalism required for current practice of surgery, obstetrics or even pediatrics in the limited training time available.

Our third and perhaps most important goal has been to make the residents expert in the *process* of individual patient care. Lacking an organ system as the focus of its intellectual and clinical work, generalists have suffered from a serious identity problem, as suggested in the letter from our former resident quoted earlier. In fact, the identity assigned to generalists has usually been one of two rather unsatisfactory types. The first is the "negative" identity, i.e., what the generalist "is not": He/she is not a specialist. This implies that the generalist plays a rather simplistic role, caring for only the most trivial problems of his/her own patients, referring anything with the slightest hint of specialty interest to specialist colleagues, retaining complex care only for those bits and pieces that are left over when the various specialists are through, e.g., breast disease or back pain. The second is the "nice guy" identity; i.e., that the generalist is different primarily by being better equipped than his/her specialist colleagues to empathize with and support the patient, to deal with emotional and social demands. Even a small amount of reflection reveals the major fallacies in this view. Not only is this perspective generally wrong in perceiving lack of specialist concern with this side of patient welfare, it has the horrendous educational implication that specialists need not and should not develop their skills in this area, since the generalist will always be there to "pick up the pieces."

In the Division of General Medicine at the University of Connecticut we have taken a more positive approach to defining the intellectual and professional identity of a generalist, building this approach into the residency. Thus, while we continue to place major emphasis on the skills required to deal with the behavioral and emotional dimension of a medical practice, we have adopted the process of individual patient care as the "organ-system" of our expertise. Starting with people's entry through screening programs or with specific complaints, moving on through information-gathering in history and physical exam, lab work, to problem-formulation, various management-interventions and, ultimately, outcome, individual patient-care is a discrete and continuous process with its own "physiology," subject to the same kind of painstaking, scientific and quantitative scrutiny as any other biologic discipline.[2] We feel our faculty and residents should become truly expert in this discipline as an essential part of their professional development.

## The Specifics of the Program

Although some details of the program have changed, it remains essentially the same as when it began four years ago. The changes (we hope improvements) have come about both because we have learned what is not useful or necessary, and because of local constraints imposed by clinical and faculty resources. A typical overall resident schedule is outlined in the accompanying figure, following by explanation and comment on its specific features:



*Postgraduate Year

1) *Timing, recruitment and numbers*

Primary care internal medicine residencies have developed around the country in many different patterns. Most become identifiably separate from the traditional program during the PGY2 year; some start as early as the PGY1 year. The reasoning behind our rather "late" start in the PGY3 year deserves some comment. In the first place, as a new and developing medical school, we did not have the luxury of intensive, well-proven, acute inpatient residency experience which could be depended on to provide most or all of what a resident needs in this domain in a single year. Moreover, many would argue that even in a well-established residency, it is naive to assume that a resident has all the fundamental knowledge and experience needed to prepare for a lifetime of inpatient care after an internship alone or an internship plus a PG2 residency of which only one-half or less is spent on the inpatient services, i.e., the "sun-tan lotion fallacy."

We have taken residents into the program, therefore, only after completing two full years of straight medical residency training (PGY1 and 2 years). For a variety of financial and logistic reasons we have strongly favored residents coming from our own PGY1 and 2 years, but have, on occasion, accepted residents from elsewhere.

To date we have not required commitments from those of our residents who undertake the AIM residency prior to the autumn of their PG2 year. Although this has led to a sort of "Russian roulette" situation each year in the filling of AIM residency positions, a major unanticipated advantage to this approach has emerged with time. Because the residents make their choice of the AIM program well beyond their undifferentiated medical school years, indeed after they have borne the load of their internship and some resident responsibilities, their decision to elect a Primary Care track seems to be entered into with few reservations and a fully-developed, firm sense of purpose. Thus, although there have been some dissatisfactions with various aspects of the program, no resident (in our admittedly small total sample of 18) who has entered the program has dropped out, switched programs or voiced major reservations about their choice of this type of track. Moreover, the residents have withstood with remarkable equanimity all the rigors of a residency which has been a new and, in several aspects, an experimental venture, and which has included from the start some elements with substantial "face repugnance," e.g., the alcohol treatment program and geriatrics.

Currently, the program is set up to accept three residents and to graduate three each year. Since the program is two years long, a total of six residents occupy AIM residency positions during each academic year. This represents 15 to 20 percent of our total general internal medicine residency positions. Funding for these residents has come entirely from the same combination of hospital, state and federal sources which supports the traditional residents. We view this as right and proper, since, to some degree, the AIM residents are integrated into the overall program, and moreover the mix of service and teaching is basically no different than in the traditional program. On the other hand, the locus of this training is much more in ambulatory than inpatient settings, which makes it logical to seek some support from the budgets of those ambulatory sites. The financial viability of such ambulatory site-derived stipends is questionable, however.[3]

2) *Ambulatory medicine: the core of the program*

The ambulatory care aspect of the program is structured in two complementary ways: "vertical" and "horizontal." The "vertical" component consists of a total of 12 months of full-time abulatory medicine, divided into three four-month blocks. In general, two of these blocks are included in the PG3 year and one in the PG4 year to provide some balance and mix of experience in each year. Each of the blocks is spent in a different ambulatory care setting providing the resident with concentrated exposure to different practice models. Currently, these three practice training-sites are, a) the Faculty Group Practice at the UConn Health Center in Farmington; b) the Newington V.A. medical clinics; and c) the Burgdorf Clinics-Smith Towers Geriatrics Clinic-Community Health Services, Inc., in Hartford.

While the General Medicine section of the multispecialty Faculty Group Practice at the Health Center differs in some ways from office practices in the community, there are enough common elements to capture many essentials of patient-mix, patient-physician relationship, and office procedure which characterize a broad-spectrum community practice. In contrast, the V.A. provides professional experience for the residents in a highly bureaucratized institutional structure and includes considerably more involvement with midlevel practitioners. Finally, the time assigned to the Burgdorf Clinics immerses the residents in the problems of urban medicine: the Burgdorf itself represents a University-supported service in North Hartford with increasing community control and involvement, while Community Health Services, Inc. (CHSI), nearby is based directly on community sponsorship, and has developed a substantial component of outreach services. During the rotation at the Burgdorf Clinics about 30 percent of the time is devoted to ambulatory geriatric care, largely through the Smith Towers Clinic, but also in the Burgdorf Clinic itself. The clinic at Smith Towers housing project for the elderly in South Hartford, an innovative project conceived and initiated by Dr. Ian Lawson, provides us with a unique learning opportunity. Supervised by a geriatric nurse-practitioner and focused around a carefully structured problem-oriented medical record, the Smith Towers teaches residents it is possible to be complete, precise and efficient in the care of the entire range of problems of the multiproblem elderly if the care system is properly tailored to the patients' biological and social needs.[4] During their half-day a week at CHSI, the residents' geriatric experience is expanded by making visits to home-bound elderly with their geriatric nurse-practitioner.

For their "horizontal" ambulatory-care-experience, residents spend one half-day per week every week in an office-practice session, always at the same site, throughout the entire time they are in the program, no matter to what other service they are assigned. Since most of the residents come into the AIM program from the University of Connecticut PGY1 and 2 years, this horizontal care of their stable panel of 100 to 200 or so patients may extend to over four full years of continuous, longitudinal followup by the time they have completed the AIM residency.

Just as on the inpatient services, the learning process in both the "vertical" and "horizontal" ambulatory care rotations is based primarily on the case method, i.e., the workup, care-for and followup of many individual patients. This experiential learning is supplemented with didactic and case-review teaching, as indicated below. At the several training sites, each medical director, a member of the General Medicine faculty, is directly responsible for the resident teaching and for evaluation of performance.

This combination of "vertical" and "horizontal" organization of ambulatory care experience has functioned quite well. Four months at each of the "vertical" sites, engaged in direct patient care for four to six sessions/week, appears to be long and intense enough to allow the resident to become fully involved in each practice, appreciate its strengths and weaknesses, and get beneath the surface of its organization. There is no substitute, however, for several years of continuous patient followup to develop a feel for the evolution of many problems of "upright" patients and for the proper pace of workup and therapy. This the longitudinal practice provides.

3) *Acute inpatient care and electives*

Residents arrive in the AIM residency fresh from two years of inpatient experience and are generally confident of their acute care skills. During the course of the two AIM residency years, they spend between six and 12 additional weeks back on the general inpatient service. This serves several purposes. First, it prevents them from becoming "rusty," from losing the "sharp edge" of their acute care skills before those skills are fully consolidated. Second, this provides one way in which the AIM residents maintain at least a partial involvement in and identity with the traditional residency. Not only is it important for AIM residents to realize continuously their collegiality with other internists, but the relatively small size of the AIM program and its geographic scatter would make it difficult to maintain the "critical mass" necessary for mutual support and for sharing of information and ideas among fellow residents if the AIM resident schedules were fully isolated from the rest of the program.

In addition to general inpatient service rotations the AIM residents have approximately eight months to rotate through electives. Although occasionally a resident feels the need to use some of this time to acquire pediatric or limited surgical skills, the electives are provided primarily to achieve depth and competence in internal medicine specialty areas, e.g., gastroenterology, cardiology and the like. A considerable portion of the training in specialty electives involves care of ambulatory patients particularly in areas dealing with chronic diseases such as diabetes, arthritis and Chronic Obstructive Pulmonary Disease (COPD). About half the elective time is scheduled in the PG3 year and half in the PG4 year.

No formal distinctions in curriculum or experiences are made for AIM residents rotating through the specialty electives compared with the other residents in the program. However, both faculty and AIM residents understand that extra attention will be focused on learning explicitly what problems can and should be handled by a generalist him/herself, what problems should be referred, and when.

4) *Disciplines outside of internal medicine*

Six areas outside of the traditional confines of internal medicine are formally included in the AIM residency. In introducing these areas to the curriculum we have been fortunate in receiving strong support and cooperation from faculty and practitioners in these disciplines.

For the experience in the office practice of otorhinolaryngology (ORL), gynecology, ophthalmology, dermatology and orthopedics, our approach has been to provide the resident with 16 consecutive weekly half-day sessions spent with supervising faculty in each area. Sixteen sessions spread out over four months seems to combine a total "critical mass" of exposure with a longitudinal followup sufficient to grasp the process of working problems out over time.

The basic expectations for our AIM resident participation in these rotations are as follows: First, the resident should be primarily responsible for the workup, therapy and follow-through on the patients, under faculty supervision, rather than a passive observer. Since our residents come into these rotations at a moderately advanced stage of their graduate training, supervising faculty have found it relatively easy to share primary responsibility for their patients. The faculty in these disciplines are also given to understand clearly that the AIM residents are ready, willing and able to care for other medical problems of their patients. Moreover, it is understood that the resident can and should be called upon to teach and consult on internal medicine problems generally while in the teaching session. This *quid pro quo* has helped not only to keep the resident's focus on the patient's entire list of problems, with its interacting co-morbidities and subtleties, but we believe has given a strong boost to the interest and commitment of the supervising faculty, since they can receive as well as give in their teaching sessions.

Second, the primary goal for the resident's rotation through each of these "extra-medicine" disciplines has been to learn to do a careful, systematic and efficient evaluation of the problem—knowing how to take a really good history in each special area and do a proper exam of the key system(s). Perception is, of course, an active rather than a passive process, and gathering the data well depends on knowledge of at least the major problems presenting in each area. The residents are therefore expected to learn the basic elements of these problems. However, the emphasis is on fundamentals of diagnosis and management, and on the inter-play of internal medicine problems with those in each special discipline rather than the nuances and fine-points of the special discipline itself.

These rotations are spread throughout the program to provide variety and balance to the ambulatory care blocks and to avoid overload with multiple special area learning during a single time-period. Thus, ORL and gynecology are generally included throughout the Faculty Group Practice block, ophthalmology (currently done only every other week) and dermatology during the Burgdorf block, and orthopedics during the V.A. block.

Because of the special nature of behavioral/emotional medicine, the approach to this discipline has been somewhat different than with the other special areas. We decided, again, that both "vertical" and "horizontal" experiences would be desirable and mutually complementary. When we approached the psychiatry department about setting up such rotations, the school and clinical services were young and rudimentary, which limited the available resources. Dr. Benjamin Wiesel, then chairman of the Department of Psychiatry, suggested that we involve the AIM resident for a block of time on the newly-implemented inpatient Alcohol Treatment Program at the Health Center. Although this suggestion initially seemed somewhat tangential, further reflection indicated that it had some unique and important virtues, most of which have been borne out by experience. Patients in this Alcohol Treatment Program receive three weeks of intensive individual counseling, group therapy, education and medical therapy. Medical, social, family, and psychiatric problems not only abound in this group of patients, but they are usually closely intertwined, requiring advanced skill to disentangle them and multiple therapeutic approaches for their resolution. The AIM residents are assigned a series of patients for initial evaluation who are then managed and followed through the three-week course of therapy, under the close supervision of the unit staff physicians and counselors. The two-month experience for the residents on this unit accomplishes at least three things: 1) total immersion in the specifics of alcoholism—its biology, its social, psychological and medical aspects, in itself valuable information and experience given the frequency of alcoholism in most primary care practices; 2) a sophisticated challenge to the clinical skills of the resident since the multiple problems of the patients cross so many disciplinary lines; and 3) a set of management skills, including counseling, group therapy, marital therapy, appropriate psychopharmacology, and, on occasion, even certain ancillary techniques such as hypnosis, which have wider applicability in a general medicine practice.

In addition to this block of time on the Alcohol Treatment Program, most residents are assigned to the Psychiatric Outpatient Treatment services, usually in the PG4 year, for weekly supervised psychotherapy sessions. Patients' problems are carefully selected to represent examples of the major psychopathologies dealt with in a general internal medicine practice: e.g., depression, anxiety, chronic psychosis. The resident generally spends an hour a week with each of three patients, then an hour with his/her supervisor; in addition, weekly group discussions and case presentations are held with a faculty preceptor. In the course of these teaching sessions, the residents not only have an opportunity to review videotapes of their own patient interviews but also explore and deal with many of their own concerns and anxieties connected with handling emotionally charged issues. While the residents have often been apprehensive in anticipation of undertaking this ambulatory psychiatric experience, by the time they finish they usually perceive the sessions as among the more worthwhile elements of the entire AIM program.

Most recently, through the liaison of several General Medicine faculty with the Sex Evaluation and Treatment group at the Health Center, AIM residents are also given an opportunity to participate in an integrated evaluation and treatment program for patients with major sexual dysfunction. Developed by the Sarrel's at Yale Medical School,[5] this treatment-approach defines a highly specific role for the internist, focused largely around the "teaching physical examination," a technique which, again, is generalizable in important ways to other problems and patients in an internal medicine practice.

5) *Didactic teaching*

Although the bulk of the learning in the AIM program is experiential (supervised care of patients), didactic exercises are an integral part of the teaching as well. The major teaching session, which serves dual functions as a seminar for Division faculty as well as resident instruction, is General Medicine Rounds, held weekly during most of the academic year. These sessions, which started several years ago as the "LMD Journal Club," have evolved in format over several years, but the basic thrust has remained constant: to apply rigorous, analytical study to any and all areas of General Internal Medicine, from the most mundane (e.g., back pain) to the most exotic (e.g., the design of controlled clinical trials). Structured teaching in these sessions by the Division faculty, often in groups of two or three weekly presentations devoted to aspects of a single topic, is balanced with case presentations and literature review by the AIM residents. The subjects covered in one recent year are listed in Table 1.

Table I

TOPICS PRESENTED IN GENERAL MEDICINE ROUNDS DURING ONE ACADEMIC YEAR

- Screening (two sessions):
  - Introduction, definitions and calculations: the case of the Pap smear.
  - Review of existing procedures and recommendations for practice.
- Setting up an office practice (five sessions).
- Case presentations and literature review:
  - Secondary diabetes mellitus
  - Trichinosis
  - Hyperlipidemias: whether, when and how to treat
  - Immunizations for the internist
  - Dizzy patients
- How to read a medical paper.
- How to audit a medical record.
- Compliance (two sessions):
  - Drugs, diets and health maintenance
  - Behavioral medicine
- The medical problems of the Vietnamese community.
- Decision analysis in medicine (two sessions).
- Nutrition (two sessions):
  - Physiology of the major nutrients
  - RDA's and efficient nutrition counseling in office practice
- The internist's role in sex counseling (two sessions).
- Indexing a practice.
- Reports from national meetings (three sessions):
  - Third national symposium on patient education
  - ACP annual meeting
  - Agent Orange
  - Interviewing workshop: Society of Research and Education in Primary Care Internal Medicine (SREPCIM)
  - National meeting: (SREPCIM)
  - Continuing Medical Education: national meeting

Some of the subjects listed in the table, e.g., nutrition, sexual counseling, behavioral medicine, appear to warrant either repetition or even expanded presentations each year. Others, e.g., reading the medical literature, decision-analysis, may be more usefully presented every other year, thus making up part of a two-year cycle of seminars. Many additional topics, ranging from medical ethics, occupational medicine and legal medicine to relaxation techniques and acupuncture, are reviewed as well.

One discussion worthy of note, held each year with increasing success, is a series of sessions on the realities of setting up a medical practice. These sessions are organized and presented by two of our faculty in practice who have given special thought to organizing and launching a patient-centered, efficient and satisfying practice. The discussion covers everything from the art and science of choosing a practice location, practice-mode (e.g., solo, partnership, group, etc.) and office space, to telephone use, night- and house-calls, record-keeping and patient-indexes. In conjunction with these formal discussions of indexing (i.e., age-sex registers, diagnostic coding, and E-book encounter registers), the residents are given the opportunity to code the diagnoses, using the ICHPPC classification[6] and index their practice during their rotation in the medical module at the Health Center.[7]

Psychopharmacology occupies a unique position at the interface of psychiatry and internal medicine. Because of its increasing importance for internal medical practice as well as its increasing complexity the residents are also given the opportunity to attend a separate series of seminars, presented by the Liaison Psychiatry Group under Dr. Mahlon Hale, on the Pharmacology of Psychotherapeutic drugs.

Finally, the central diagnostic and therapeutic workhorse of the internist remains the medical interview. Capturing and teaching the essentials of what goes on during interviews, including both the transfer of information and the handling of feelings, is a difficult task at best. However, a number of techniques for analyzing, reviewing and improving skills in medical interviewing have now been developed which show considerable promise. Following the lead of the British psychoanalyst, Michael Balint,[8] therefore, we have begun monthly evening discussion groups involving residents, faculty from the Division of General Medicine, Dr. Hale, and Dr. Julie Donnelly, a psychologist and counselor in professional development. These sessions involve case presentations, discussion of patient and physician feelings, review of the literature (for example, References 9-11), and will soon be expanded to include study of videotapes or audio recordings of actual and simulated interviews.

6) *Problems and prospects*

As the program has proceeded, a number of generic problems have emerged over and above the problems of maintenance or general quality control. First, several of our own residents told us they preferred the AIM residency to the more traditional program, but wanted to spend only a single PG3 year with us. Some did so because their life and career plans did not permit spending a fourth postgraduate year in training prior to entering practice; others had already decided on and been accepted into a specialty fellowship for the succeeding, PG4 year. The decision whether to accept such "single year" residents was affected by many factors: on the one hand, taking on such residents would not only present us with substantial logistic and scheduling problems, but would also be contrary to the fundamental rationale for developing a four-year curriculum in the first place and could threaten the identity of a newly-emerging training program. On the other hand, these residents were from our own ranks for which reason we felt a strong commitment to meet their needs. Moreover, among this group were a number of our most capable residents which made it even more difficult to decline their requests. For those entering practice directly, the advantages of spending even limited time in the AIM program were fairly evident. Since a great majority of physicians practicing a specialty of internal medicine devote a substantial portion of their time and effort to general internal medicine,[12] AIM residency experience prior to specialty fellowship also assumes a very reasonable aspect.

We have therefore been willing to take some residents into the AIM program for the PG3 year only; indeed, to date about one-half of all residents coming through the program, including the resident whose letter is quoted at the beginning of this review, have chosen to do so on this shortened basis. We have tailor-made their schedules, generally including seven months of ambulatory care, in two sites, a month on inpatient services, the balance being electives. Several such one-year PG3 residents have elected to take both the ambulatory psychiatry and alcohol treatment program experiences. More recently, we have begun to accept a limited number of residents from outside the program into PG4 positions vacated by those leaving after the PG3 year. This most senior year can provide not only the clinical experience unique to the AIM program, but for some will serve as a modified fellowship year, including some research experience leading to careers in academic general medicine.

Although, as noted, a good many of our residents have "voted with their feet" for the shorter program, we continue to urge all those who consider the program to carry it through the four years. Since, however, four-year training is more expensive, per resident trained, and since the majority of primary care track residencies elsewhere require only three years of training, we have continued to ponder the question as to whether we can justify a four-year curriculum. There is no easy answer: at this point we must rely mainly on our original rationale for the four-year program, which, to us, seems more carefully thought out than many other post-graduate training plans. Moreover, we take the view that with the great breadth of content and the complexity of skills required to deal with multiproblem-patients occupying the entire behavioral/organic spectrum of disease, there is no reason *a priori* why general medicine training should require any less time than for most specialties of internal medicine; indeed, general medicine might be expected to require more.

Most of the residents who have completed either three or four years of the AIM program have taken the American Board of Internal Medicine certifying examination, and the majority have passed. This performance obviously gives only very limited information concerning the usefulness of the AIM program, generally, and four years of training in particular, but does provide some reassurance that at least the program meets minimum standards. More to the point, we plan to survey graduates of the program concerning their perceptions of strengths and weaknesses, their adequacy of preparation for practice, and suggestions for changes. The current (or planned) careers of the 18 residents who have finished (or will soon finish) the program we listed in Table 2. Roughly half of the graduates have chosen to remain in Connecticut, supporting the general observation that physicians tend to locate their practices in the area of their post-graduate training. Several have worked or are working in medically underserved areas, which encourages us to believe that participation in rewarding experiences in such areas during their training has reinforced their inclination to choose those areas for practice.

Table 2
PRESENT OR PLANNED PROFESSIONAL ACTIVITIES GRADUATES OF UCONN AIM PROGRAM (1978 - 1981)

| *Resident* | *Years in Program* | *Year Graduated* | *Activity* | *Latest Location: Geographic Region of U.S.* |
|---|---|---|---|---|
| 1 | 2 | 1978 | HMO* | Northwest |
| 2 | 2 | 1978 | Practice: 3-man partnership | Northeast |
| 3 | 2 | 1978 | NHSC** → practice | Northeast |
| 4 | 1 | 1978 | HMO → practice | Southeast |
| 5 | 1 | 1978 | HMO → practice (geriatrics) | Southeast |
| 6 | 1 | 1979 | HMO → medical administration | Connecticut |
| 7 | 1 | 1979 | NHSC → clinic practice | Southeast |
| 8 | 1 | 1979 | NHSC → clinic practice | Connecticut |
| 9 | 2 | 1979 | Solo practice | Connecticut |
| 10 | 2 | 1980 | Solo practice | Connecticut |
| 11 | 2 | 1980 | Specialty fellowship | West |
| 12 | 1 | 1980 | Specialty fellowship | Middle Atlantic |
| 13 | 1 | 1980 | Chief Residency → practice (geriatrics) | Connecticut |
| 14 | 2 | 1981 | Clinic practice | Southwest |
| 15 | 1 | 1981 | Practice | Undecided |
| 16 | 1 | 1981 | Practice | Northern Europe |
| 17 | 1 | 1981 | Specialty fellowship | Connecticut |
| 18 | 1 | 1981 | NHSC | Uncertain |

* Health Maintenance Organization
** National Health Service Corps.

Finally, since the program seems to be flourishing, meeting the needs not only of our present trainees but also of the state, we feel it makes sense to expand it. Faculty, budget for resident salaries, and available training sites are unfortunately limited within the University *per se,* however. We look therefore to the development of parallel programs within our affiliated hospitals in the Hartford area which can become closely integrated with the present AIM program. By sharing experience and resources we may in the future be able to increase the number of residents graduating from such an intensive, structured program in Connecticut, thereby increasing the critical mass of those devoted to "knowing what a good internist is and believing that general medicine is as worthy of respect as any other area of medicine."

## REFERENCES

1. *Society for Research and Education in Primary Care Internal Medicine: Primary Care Internal Medicine Residency Survey.* c/o John M. Eisenberg, 4200 Pine Street, Philadelphia, PA 19104
2. Davidoff F: Clinical medicine as a hard science. *Clinical and Investigative Medicine* (in press)
3. Stern RS, Jennings M, Delbanco TL, Dorsey JL, Stoeckle JD and Lawrence RS: Graduate education in primary care. An economic analysis. *New Engl J Med 297:*638-643 (1977)
4. Lawson IR: A taxonomy of geriatric care using the problem-oriented record system, *in* "Language of Geriatric Care. Implications for Professional Review," IR Lawson and SR Ingman, editors. *Connecticut Health Services Research Series, Monograph, #6,* P.O. Box 504, North Haven, CT 06473 (1975)
5. Sarrel LJ and Sarrell PM: *Sexual Unfolding: Sexual development and sex therapies in late adolescence,* Boston: Little, Brown, and Co., 1979
6. International Classification of Health Problems in Primary Care, Chicago: American Hospital Association, 1975
7. Sullivan RJ Jr: The organization of a primary physician's office practice *in Primary Care and the Practice of Medicine,* edited by John Noble, Boston: Little, Brown and Co., 1976, pp. 91-127
8. Balint M: *The Doctor, his Patient, and the Illness,* New York: International Universities Press, 1957
9. Rynearson RR and Stewart WL: The dependency problem: the most common surgical risk. *Surg Clin N Amer 52:*459-465 (1972)
10. Groves JE: Taking care of the hateful patient. *New Engl J Med 298:*883-887 (1978)
11. Platt FW and McMath JC: Clinical Hypocompetence: the interview. *Ann Int Med 91:*898-902 (1979)
12. Aiken L, Lewis CE, Craig J, Mendenhall RC, Blendon RJ and Rogers OE: The contribution of specialists to the delivery of primary care. *New Engl J Med 300:*1363-1370 (1979)

AYR INSURANCE AGENCY

ALLENBY H. AYR ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

# Malpractice, Quality Assurance, and Continuing Education: A Linkage Past Due

MARVIN GARRELL, M.D.

COMMENTARY—In view of the sharply worsening experience and costs of the CSMS Professional Liability Program, discussions between the Society and the Aetna in the spring of 1979 quickly led to the formation of a Joint Subcommittee on Patient Injury Prevention, involving CSMS committee leaders in Professional Liability, Continuing Medical Education, and Continuing Care, together with leaders from the Aetna's Loss Control, Medical, and Claims Departments. The outcome has been the development and testing of the new CSMS Patient Risk Prevention Program. It was approved by the Society's Council in August, 1980, and published in the September, 1980 issue of *Connecticut Medicine.* A statewide network of physician liaison officers was established by year-end and program implementation begun in January.

In this article, Dr. Garrell presents a capsule summary of the actual mechanism developed by which patient injury prevention activities may be carried out by hospital medical staffs through the analysis of real, although "sterilized" malpractice episodes from the files of the Aetna. This process was presented on January 20, 1981, to the first plenary meeting of the physician Liaison Officers to the expanded Patient Injury Prevention Subcommittee. The medical staffs of most of Connecticut's community hospitals were represented by such liaison officers, and Chiefs of Medical Staffs represented others. Most CSMS Specialty Sections were likewise represented.

In addition, all present were provided with a number of episodes for initial prevention studies in their own hospital settings. Reports on these local studies will be analyzed carefully by the Subcommittee with the help of the Liaison Officers of the appropriate CSMS Specialty Sections, so that the whole process may be refined and evaluated on an ongoing basis, and effective results shared by all.

More episodes exemplifying frequent and/or severe maloccurrences will continually be provided to medical staffs, so that through the medical analysis of known experiences, yet unknown exposures to risk may be discovered, and eliminated or reduced in each participating clinical setting. This will not be a "quick fix" for a complex problem, but rather a determined, brick by brick, episode by episode containment of preventable iatrogenic injury where it occurs. Hopefully, the additive impact of such widespread risk prevention activity may return our state to its once enviably stable and moderate liability climate to the benefit of all concerned.

Robert J. Brunell, CSMS Staff

The mention of malpractice evokes amongst physicians and health professionals an emotional response of denial; a denial that it ever happened, or it was an accident of circumstances that unfortunately could happen to anyone. However, malpractice is not an accident, but by medical and legal definition, an episode involving some kind of negligence followed by patient injury. Negligence may mean callous indifference, but that is unusual. More commonly, there has been deficit performance in the face of usual and customary practice. Available knowledge should have been applied and was not.

We, in this age of consumerism, are accountable for quality medical care. Society recognizes us as professionals; and therefore, the responsibility for quality cannot be delegated.

What we are asking ourselves is whether the misfortunes of others can be studied to prevent future injury. Eighty-four percent of malpractice mishaps occur in the hospital setting. Similarly, most continuing medical education concerns hospital-based patient care and most is transmitted in the classrooms of the community hospitals and medical centers. Why not use actual patient injury episodes and subject them to analysis

---

MARVIN GARRELL, M.D., is President of the Medical Staff and Director of Medical Education at St. Vincent's Medical Center, Bridgeport, and is in private practice in Fairfield. He serves as Chairman of the CSMS Committee on Continuing Care and Rehabilitation and is an original member of the Subcommittee on Patient Injury Prevention of the Society's Committee on Professional Liability.

with subsequent development of continuing education programs and learning objectives? The analysis requires skill to discover four components: (1) what was the medical principle not applied, (2) what was the quality control element omitted, (3) do similar deficiencies exist in our setting, and (4) what is the corrective process necessary to prevent the occurrence of a similar patient injury at our own institution.

The Aetna Casualty Insurance Company has joined in partnership with the Connecticut State Medical Society to embark on an experiment of planning continuing education based on patient injury episodes involving its clients, the physicians and hospitals of Connecticut. From this, a method should evolve to link quality assurance in medical care with continuing education as a critical component in effective learning. The ultimate goal is a decline in episodes of patient injury.

The State Medical Society enlisted St. Vincent's Medical Center as a test site for this experiment. Ten malpractice mishaps not occurring at St. Vincent's were provided from the sanitized files of Aetna. These were studied by the Medical Center's Quality Assurance Committee with the guidance of the hospital liaison physician and quality assurance coordinator. Here are three of the episodes we studied with a succinct explanation of the process.

### Episode Number 1

A surviving patient with cancer received continuous adriamycin infusion therapy that infiltrated resulting in extensive slough of skin and muscle of forearm.

*Analysis*

(1) Adriamycin should be given by a physician as a bolus under direct visual control.

(2) In case of infiltration there should be immediately available and given subcutaneously dilute sodium bicarbonate with solu-cortef.

At St. Vincent's Medical Center, only physicians can give adriamycin. On 7 East, the Oncology Unit, sodium bicarbonate and solu-cortef is brought to the bedside. This practice did not exist on other nursing units. One physician as a practice had been ordering adriamycin as dilute continuous infusion, simply adding this drug to a liter of 5% glucose.

*Conclusion*

Equivalent patient injury exposure at St. Vincent's.

*Corrective Action*

Pharmacy will dispense the antidote with all adriamycin prescriptions to be returned without charge when not used. Policy written mandating corrosive chemotherapeutic agents must only be administered under a physician's direct visual control.

### Episode Number 2

A 36-year-old white man fell a full flight of stairs. The Emergency Room examination reveals a fractured radius and lethargic state of consciousness. The fracture is casted, and the patient is admitted to the Intensive Care Unit. Two hours later he is not arousable, and seven hours later a craniotomy reveals extensive epidural hemorrhage. Death results.

*Analysis*

(1) Any patient with multiple trauma should have all the necessary physician disciplines involved. With a severe fall affecting level of consciousness, prompt neurosurgical consultation is indicated.

(2) Hospital policy should dictate this procedure and ICU nursing process should require neurological vital signs with directions for calling the physician.

At St. Vincent's Medical Center, both the Emergency Department and Surgical Department require this immediate consultation. In the case of more extensive multiple trauma, a general surgical consultation is required. The neurosurgical service has a printed nursing flow sheet for vital sign recording. This flow sheet was reassessed and considered inadequate.

*Corrective Action*

Corrective Action was needed to update the Intensive Care Unit head injury flow sheet with explicit instructions on how to quantitate level of impairment. Continuing education seminars were provided to nurses and physicians concerning head injury.

### Episode Number 3

Electroconvulsive shock therapy with anesthesia not administered by credentialed anesthetist; aspiration, cardiac arrest, death.

*Quality Control Element*

ECT only in the Operating Room area with anesthetist in attendance. Standard protocol at St. Vincent's Medical Center.

*Corrective Action*

No corrective action was needed.

*Conclusion*

Each hospital must have in place a multidisciplined system to examine all of its significant patient injury episodes. Furthermore, the individual hospital should have enough episodes from the aggregate state-wide experience to plan appropriate education programs and change when indicated through management principles and continuing education. As we perfect the process, the lead time from injury to correction will shorten. Eventually, the sanitized Aetna files of open claims will be used for more immediate activity. We do not know if this analysis will reduce the frequency and cost of mishaps, but if each hospital's experience can be projected statewide, perhaps we all will attain a containment of this problem.

ACKNOWLEDGEMENTS

Linda Pearcy, R.N., St. Vincent's Medical Center.
Robert Brunell, M.A., Staff of CSMS.
David Kellsey, M.D., D.J. Pecorino, L.L.B., The Aetna Life & Casualty Co.

# A Brief History of Tuberculosis

FREDERICK C. WARRING, JR., M.D.

ABSTRACT—In 1981 France and the scientific world are observing the 200th anniversary of the birth of René Théophile Hyacinthe Laënnec. Born February 12, 1781 at Quimper in Brittany, this brilliant clinician and pathologist played a major role in the history of tuberculosis. An avid student of this and other pulmonary diseases, he gave to physicians the stethoscope and described in minute detail the use of this instrument in the examination of the lungs and the heart. Alas—the phthisis he investigated so thoroughly took his life at the too early age of 45.

*For he lives twice who can at once employ*
*The present well, and ev'n the past enjoy.*
—Alexander Pope, *(Imitation of Martial)*

### Introduction

This is a chronicle of the conquest of tuberculosis.

It begins in the eighteenth century when the "Great White Plague" was the leading cause of death and disability in the Western World. It is the story of numerous individuals in many countries and disciplines, some still eminent and others obscure, who contributed directly or indirectly to the eventual control of consumption—beginning with Auenbrugger in 1761 and concluding with Waksman and others who participated in the dramatic modern era of chemotherapy. It is a tale, too, of many organizations, institutions, governmental agencies and society uniting to play a unique role, as never before, in conquering a major, widespread disease.

The story has already been told in greater detail by others to whom this writer is indebted for records of past events. Their publications are listed at the end of this article for those who wish to pursue this subject in greater depth. They contain specific references which have been purposely omitted from this brief narrative.

To the overall history has been added highlights of the fight against tuberculosis in our own State of Connecticut, although it is not possible to describe every person or every institution that has participated. Finally, the author has contributed a few reminiscences of his own.

Only recently has tuberculosis come under control, although not yet eradicated. The last generation that personally knew and experienced the frustrations and grief associated with this disease is passing. Hopefully this brief history will serve to recall the past and emphasize the remarkable achievements of the present.

*****

Tuberculosis is an ancient disease. Archeologists have found evidence of it in the skeletal remains of Sumerians and Egyptians who died 6,000 years ago. Hippocrates (c.460 - c.370 B.C.) wrote the first known detailed description of patients suffering from the disease which he named "phthisis" (Gr. phthiein—to decay, or waste away).

But let us begin this brief history of tuberculosis in the year 1761. We can emphasize the medical and lay ignorance and the horrible nature of this disease in those days by describing an imaginary family in

---

FREDERICK C. WARRING, JR., M.D., formerly, Superintendent and Medical Director, Laurel Heights Hospital, Shelton, CT; Associate Clinical Professor of Medicine, Yale University School of Medicine.

Presented in part at a Symposium on Tuberculosis held at St. Mary's Hospital, Waterbury, Connecticut, on October 11, 1979.

Staffordshire, England. The eighteen-year old daughter, Anne, has just been found to have phthisis. The diagnosis was made, not by examination of her chest, which was not practiced at that time, but by the physician listening to the family's description of her appearance and symptoms—'consuming of all of the Muscular or Fleshy Parts of the Body accompanied by a cough, purulent spitting, Hectick Fever, Shortness of Breath, Night Sweats, etc.,'. Under these conditions the disease was rarely discovered at an early stage and the poor girl was dead within a year of "galloping consumption." It was thought by the learned physicians of the day that her tuberculous process had been inherited from her mother, whom she loved dearly and had cared for during her lengthy terminal illness at home a few years before. The contagiousness of the disease was not recognized and so her younger sister, who continued to sleep in the same bed with Anne "came down with consumption" (Lat. consumptio—a wasting) and died two years later. The occurrence of consumption in a family was considered a stigma and another sister, although attractive, never received any proposals of marriage, while her brother, a skilled craftsman, had difficulty finding employment.

There were no sanatoriums then where persons with consumption could be isolated and cared for, there was no systematic reporting of diseases and no departments of health. So we must rely on parish records which inform us that one in four deaths in London in 1741 was due to this number one killer—tuberculosis. It is believed that nearly everyone was infected at an early age.

Treatment of consumption in the seventeenth and eighteenth centuries was equally primitive. Quinine, tea, coffee and even tobacco as therapeutic agents all had their proponents. Thomas Sydenham (1624-1689), called "the English Hippocrates," seriously recommended horseback riding as beneficial for patients with phthisis. "The King's Evil" or scrofula (tuberculosis of the cervical lymph nodes) was supposed to respond to "the King's Touch." Charles II, in his twenty-five years as monarch of England is reported to have "touched" 90,798 persons. Each petitioner received a medal or "touch piece" in gold or bronze, depending upon the state of the royal treasury. This ancient ritual is described by William Shakespeare in Macbeth:

> "but strangely-visited people,
> All swoln and ulcerous, pitiful to the eye,
> The mere despair of surgery, he cures,
> Hanging a golden stamp[1] about their necks,
> Put on with holy prayers:"

Some physicians even recommended applying to the neck an ointment of human fat, obtained by apothecaries from executioners and compounded with aromatic herbs! Approximately half of the population of England had evidence of scrofula. Samuel Johnson was one of those touched by Queen Anne in 1712, but like so many others he was not cured.

The year 1761 marks the beginning of the slow, step-by-step progress made in recognizing the nature of tuberculosis, in diagnosing it, in treating patients rationally, in controlling the spread of the disease and then, eventually, discovering the means to eradicate the Great White Plague. In that year (1761) Leopold Auenbrugger of Vienna published his observations on percussion of the chest. He had watched his father, an innkeeper, thumping casks of wine to determine the level of fluid contained therein. The fact that Auenbrugger was also a musician helped him in perceiving differences in the percussion note so elicited. Auenbrugger's technique was largely ignored until 1797 when it was popularized in Paris by Jean Nicholas Corvisart, teacher of Laënnec, and later to become physician to Napoleon. By this simple technique it was possible to demonstrate pleural fluid and gross changes in the lung parenchyma during life.

In 1819 René Théophile Hyacinthe Laënnec, a brilliant French clinician and pathologist, described his invention of the stethoscope (Gr. stethos + skopein—to examine the chest). The original instrument was simply a hollow wooden "cylinder," one end of which was applied to the patient's chest while the physician listened at the other. The idea of mediate auscultation, it is said, occurred to Laënnec as he watched children at play in a nearby park. One would scratch the end of a long log while another would listen to the transmitted sound at the far end. Laënnec carefully correlated the breath sounds and rales he heard on auscultation with his findings at autopsy and wrote excellent pathological and clinical descriptions of a variety of pulmonary diseases, especially tuberculosis. At first mediate auscultation was shunned by most physicians. The technique took too much time and they considered it embarrassing to examine bare female bosoms. It was 1841 before auscultation was made popular by two French physicians, Jean Barth and Henri Roger.

René Laënnec himself died of pulmonary and intestinal tuberculosis at the age of 45. Likewise his mother, his younger brother, his priestly uncle and his close friend Gaspard Bayle, distinguished French physician and anatomist, all succumbed to this disease.

These two inventions—percussion and mediate auscultation—formed the basis of modern physical diagnostic techniques and made possible the detection of pulmonary tuberculosis at an earlier stage.

Treatment of tuberculosis at the beginning of the nineteenth century had changed, but not for the better. Breathing in heavy vapors of a cow-house was supposed to relieve cough. Asses' milk was such a popular remedy that Gideon Harvey, a royal physician, wondered whether "ass-patient or ass-doctor was the greater ass." Even breast-fed human milk was recommended and cases of wet-nurses contracting tuberculosis were reported.

---

[1] The golden coin was called an "angel" and was equivalent to $25 in 1927.

There was no uniformity of opinion regarding climatotherapy or diet. Seashore vs. mountains, dry desert vs. cool countries, starvation vs. rich diets (including twelve eggs a day) all had their zealous advocates. Emetics, purges, inhalants, mineral waters and specifics such as creosote were popular remedies. Bleeding, cauterization and blistering of the chest added to the miseries of patients with consumption. Light exercise, carriage rides and sea voyages were thought to be beneficial. For example, the poet John Keats was treated by repeated venesection and starvation diet and then went to Rome, hoping to benefit from the change to its milder climate. There he died in 1821, at the age of 26. He had helped to care for his mother and younger brother, both of whom died of tuberculosis. As his condition worsened he coughed up blood and said, prophetically—"that blood is my death warrant, I must die." At autopsy his lungs were found to be almost completely destroyed by the disease.

Over the course of centuries various individuals had reflected on the possible contagious nature of phthisis. In 350 B.C. the Greek philosopher Aristotle had observed that persons in close proximity to consumptives tended to contract the disease and he speculated that this was due to some disease-producing substance exhaled in the patient's breath—a remarkable epidemiological observation by a philosopher who lived 2,300 years ago! Galen, the Greek physician (c.130 - 200 A.D.) who practiced in Rome, advised against intimate contact with consumptives. In 1546 Hieronymous Fracastorius, a Florentine physician, broached the opinion that phthisis was caused by invisible germs ("seminaria") which carried the contagion. He was the first to express the idea of destroying germs in the lungs. Michael Ettmüller (1653) attributed contagiousness of tuberculosis to sputum.

Benjamin Martin, a physician in London, was more specific. In 1720 he stated "The original and essential cause (of consumption) then may possibly be some certain species of animacules or wonderfully minute living creatures . . . capable of existing in our juices and vessels and which . . . may by their spontaneous motion and injurious parts, stimulating and perhaps wounding or gnawing at the tender vessels of the lung, cause all the disorders that have been mentioned." He went on to conclude that ". . . by lying in the same Bed with a consumptive Patient . . . or by very frequent conversation so nearly as to draw in part of the Breath he emits from the Lungs, a Consumption may be caught by a sound Person . . ." However, these remarkable prophetic observations by an obscure practitioner received little attention.

None of these persons could prove their contentions and the physicians of northern Europe, influenced by the Faculty of Paris, continued to doubt the contagiousness of consumption. Noting the frequent occurrence of this disease in females, they argued that the cause was a constitutional hereditary defect.

In southern Europe, on the other hand, a few enlightened principalities were the first to adopt public health measures to protect against tuberculosis. In 1699 the Republic of Lucca (Italy) passed a decree requiring the burning of clothing and personal effects of persons dying of consumption and made mandatory the notification regarding patients being treated for this malady. Similar edicts were issued by Ferdinand VI of Spain (1751) and Phillip of Naples (1782). Unfortunately, popular opinion and the economic losses entailed in destroying property before long brought about the repeal of these far-sighted laws.

It was not until 1865 that Jean Antoine Villemin, a French surgeon, actually demonstrated the infectiousness and specificity of tuberculosis. He introduced caseous tuberculous material from a human patient into rabbits and thereby produced the disease in animals. He did the same with tuberculous material from a cow, but failed to distinguish between the human and bovine types of tuberculosis.

Villemin did not, however, discover the tubercle bacillus. That distinction belongs to the German bacteriologist, Robert Koch. On March 24, 1882 Koch read his famous paper "Die Aetiologie der Tuberculose" before the Physiological Society of Berlin. In it he described the staining properties and microscopic appearance of the *Mycobacterium tuberculosis* and the experimental method by which he cultured the organisms from tuberculous lesions of humans and animals and then produced the disease by inoculating organisms from these cultures into healthy animals. This meticulous study has been proclaimed the greatest single feat in the history of bacteriological science.

Koch's announcement was greeted with tremendous enthusiasm. Lawrason Brown relates "On the third of April, 1882, a sleepy young medical man . . . was awakened by a grave, elderly physician rushing into his room, waving in his hand the morning paper and shouting 'I knew it, I knew it, I knew it.' In this way Professor William Welch, Nestor of American physicians, was informed by Doctor Austin Flint, the greatest American student of clinical tuberculosis, of the discovery of the tubercle bacillus."

The work of Koch on the tubercle bacillus and other bacteria led to his exposition of the well-known "Koch postulates." In these he set forth rules governing the cause and identification of infectious diseases, which still define investigations in the fields of bacteriology and virology today. The differentiation between human and bovine tubercle bacilli was accomplished by Theobald Smith of Harvard in 1898.

Koch's work marked the end of the false doctrine of heredity of tuberculosis. Within four years Doctor Flint was examining the sputum of patients at Bellevue Hospital for tubercle bacilli.

In 1890 Koch, who had a reputation for very thorough investigation, made a surprising announcement. He casually mentioned a 'substance' which, when injected into guinea pigs with tuberculosis, cured the disease. Later he described similar improvement in patients. Yielding to pressure from the German government Koch at first withheld description of his 'substance' but, because of his reputation there was high hope that he had indeed discovered a cure for tuberculosis. The 'substance' turned out to be old tuberculin (O.T.) a sterile liquid extracted from a bouillon culture of tubercle bacilli. Soon it was reported by Virchow and others that injections of tuberculin caused breakdown of disease rather than improvement. It was abandoned as a form of treatment, but Koch's work was not in vain. Tuberculin turned out to be one of the most valuable diagnostic tools in medicine and its purified protein derivative (P.P.D.) is still widely used throughout the world. For his work Koch received the Nobel prize in 1905.

When Sir William Crookes, English chemist and physicist, invented the vacuum (cathode ray) tube in 1875 he could not have forseen the far-reaching effects that this discovery would have on the practice of medicine. In 1895 Wilhelm Conrad Roentgen, a German physicist, while experimenting with a Crookes tube, observed the peculiar effect of cathode rays on photographic plates. This discovery of x-rays revolutionized almost all aspects of diagnosis and treatment in medicine and surgery. In the United States Doctor Francis Williams of Boston was the first to use roentgenograms to diagnose and follow the treatment of patients with pulmonary tuberculosis (1896). To his surprise he found that more disease was visualized in the chest roentgenogram than could be detected by physical examination and that roentgenograms showed signs of early disease and changes before they could be determined by percussion or auscultation.

"Ubi Crookes, ibi lux."

Even after the use of chest roentgenograms became well established there were some skilled clinicians who continued to rely on mediate auscultation to assist them in the management of patients with pulmonary tuberculosis. One of these was Doctor Victor Cullen, Medical Director of the Maryland State Sanatorium. Doctor Cullen personally auscultated the chest of every patient in his large sanatorium each month. The present writer once observed him while he listened intently to the breath sounds and rales in the lungs of a young medical student ill with tuberculosis. At the conclusion of his examination, without any prior knowledge of the patient's medical history and without having seen the chest roentgenograms he correctly stated that the disease had begun as a pneumonic process, had shown some clearing and organization and had then relapsed to form a small (2.0 cm.) cavity.

At about the time Koch demonstrated the tubercle bacillus rational advances in the treatment of tuberculosis emerged—first by the establishment of sanatoriums and then by the development of means for collapsing and resting diseased lungs.

The first hospital for *domiciliary* care of patients with any form of consumption was the Hôpital Saint Marcoul, founded in Rheims in 1645 by a pious lady. However the forerunner of modern sanatorium *treatment* occurred in 1840, when a Warwickshire practitioner, George Bodington, took a house for this purpose and prescribed fresh air, nutritious diet and a proper quantity of wine—but not bedrest for his patients. In 1854 the first sanatorium was built by Hermann Brehmer at Görbersdorf in the mountains of Germany. It was reasoned that fresh air and high altitude, with its reduced atmospheric pressure, would improve the pulmonary circulation and metabolism. Rest in bed was added as the century ended.

In the United States, the Channing Home for Consumptives in Boston was established in 1857 and provided terminal nursing care, but Joseph W. Gleitsmann's American Mountain Sanitarium for Consumption in Asheville, North Carolina (1875) was the first American sanatorium for the treatment of tuberculosis under complete medical control, in a suitable climate. The first private tuberculosis sanatorium in the United States was founded by Doctor Edward L. Trudeau at Saranac Lake, New York and was to become the model and stimulus for the vast sanatorium movement in this country.

Doctor Trudeau graduated from Columbia College of Physicians and Surgeons in 1871. Two years later he was found to have tuberculosis in the upper two-thirds of his left lung—a diagnosis that was then tantamount to a death sentence. He decided to go to the Adirondack Mountains because that area "seemed to meet a longing I had for rest and peace in the great wilderness." At beautiful Saranac Lake he rested and restricted his activities and over the next three years his health gradually improved. Encouraged by this and inspired by the work of Brehmer, he solicited funds and in 1884 the first cottage of the Adirondack Cottage Sanitarium, on the side of Mount Pisgah, was opened for the treatment of patients with limited means. "The Little Red," as this first cottage was called, had two cots, a washstand, a wood burning stove for heat in the winter, two chairs and a kerosene lamp. The total cost was $100! In spite of his own precarious health Trudeau over the years labored and inspired friends and former patients to donate funds to add the almost fifty cottages, infirmaries, administration buildings, laboratories and a chapel that made up the famous Trudeau Sanatorium.

Trudeau was the first person in the United States to culture tubercle bacilli (1885). The one-room makeshift laboratory in his home grew to become the renowned Saranac Lake Laboratory for the Study of Tuberculosis—the first such laboratory in this country and from whence knowledge of the disease was disseminated throughout the world. A total of 1,226 physicians attended the Trudeau School of Tuberculosis (founded in 1914) and thereafter many went into sanatorium work in all parts of the United States.

The Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis opened in Philadelphia in 1903 under the guidance of Lawrence F. Flick. At this highly-regarded center Doctors Esmond Long and Florence Seibert perfected the purified protein derivative (P.P.D.) (1931) which replaced Old Tuberculin (O.T.) as the diagnostic antigen for tuberculosis skin testing.

Trudeau Sanatorium was one of the first to obtain one of the new x-ray machines (1912). Homer Sampson, an amateur photographer who was a patient at the sanatorium at that time, was asked to operate the machine and to develop and interpret the glass plate negatives. A man of tremendous curiosity and intellectual ability, he became a highly respected, self-trained diagnostic radiologist. St. Lawrence University awarded him an honorary degree of Doctor of Science in 1934—a distinction which delighted his many friends who could then refer to him formally as Doctor Sampson, while affectionately calling him "Paddy." There is a legend, told to and believed by this author, that Homer Sampson was presented six chest roentgenograms at a case conference at Ray Brook Sanatorium, each showing apical disease of different etiology, and was challenged to make the diagnoses from the x-rays alone. This he did, correctly, and without hesitation.

The first state-operated sanatorium in this country was opened in 1898 at hilly Rutland, Massachusetts, under the direction of Doctor Vincent Bowditch of Boston. The establishment of the Sharon Sanatorium for Working Women proved that tuberculosis could be effectively treated even at sea level. These two Massachusetts institutions demonstrated that a state government could, and would assume fiscal responsibility for building sanatoria and for treating patients with tuberculosis.

The first federal tuberculosis hospital in the United States was the U.S. Public Health and Marine Hospital Service Sanatorium, founded at Fort Stanton, New Mexico in 1899.

Tuberculosis achieved recognition as a major public health problem when Doctor Herman Biggs submitted a report to the New York City Commission on Health in 1899. It stated that the disease was acquired by direct transmission from a sick to a well person by means of sputum floating in the air and that, therefore, tuberculosis was a preventable disease. It recommended (1) protection against tuberculous meats and milk by inspection, (2) dissemination of knowledge that tuberculosis patients can transmit the disease and (3) careful disinfection of rooms occupied by tuberculous patients. The Health Department adopted his recommendations and added compulsory reporting of the disease, special wards or hospitals for treatment of tuberculosis, adequate laboratory facilities and a chain of clinics for diagnosis and ambulatory follow-up care. This report formed the sound basis for the program of tuberculosis control that became universal throughout the United States.

Under the Constitution of the United States public health matters were the concern, not of the federal government, but of the individual states. At the beginning of the twentieth century only a few states had well-organized health departments. It was evident that there was an acute need for voluntary tuberculosis associations to initiate and support programs of tuberculosis control by local governments, and to educate the public. The Pennsylvania Society for the Prevention of Tuberculosis, founded in 1892, was the pioneer in this field. A group of volunteer physicians and laymen, organized by Doctor Lawrence F. Flick of Philadelphia proposed (1) promulgation of the doctrine of the contagiousness of tuberculosis, (2) instruction of the public in methods to avoid and prevent infection, (3) provision of hospital care and necessities of life for the consumptive poor, (4) cooperation with local boards of health and (5) enactment of laws to prevent infection.

In 1904 the National Association for the Study and Prevention of Tuberculosis (NASPT) was founded, with Edward Trudeau as President and Herman Biggs and William Osler as vice-presidents. The name was shortened to the National Tuberculosis Association (NTA) in 1918. By 1931 there were 1,471 state and local tuberculosis associations of volunteer laymen and physicians carrying out their important functions. In 1973, with tuberculosis under control and with emphasis now more on non-tuberculous pulmonary diseases the National Tuberculosis Association became the American Lung Association (ALA).

Many of the early sanatorium physicians were remarkable individuals. Some of them had had tuberculosis themselves. Not only did they provide medical care for their patients, but they were responsible as well for all aspects of administration in their institutions, for training doctors, nurses and laboratory personnel and for raising funds from private or legislative sources. In 1905 thirty-four of these sanatorium physicians founded the American Sanatorium Association (ASA) for the purpose of getting together to discuss their mutual problems. Doctor Vincent Bowditch was elected the first president. From the beginning the ASA was affiliated with the NASPT and in 1915 was officially made the scientific medical section of that organization. As the years passed, with enlargement of objectives and increased membership, the ASA became the American Trudeau Society (ATS) in 1939. Thereafter the Society played an increasingly important role in tuberculosis control in this country and throughout the world. Regional and local branches were formed in the United States. Scholarly papers on all aspects of tuberculosis and other pulmonary diseases were presented at the well-attended annual scientific meetings. The Society prepared and revised the authoritative Diagnostic Standards and Classification of Tuberculosis, issued valuable and timely committee reports and abstracts on all aspects of diagnosis, treatment, bacteriology and physiology of pulmonary diseases and encouraged and supported medical education and research. In 1960 the ATS changed its name to the American Thoracic Society to reflect its increasing concern with all pulmonary diseases. By 1975 membership had exceeded 8,000. The official journal of the Society is the prestigious American Review of Respiratory Disease (founded in 1917 as the American Review of Tuberculosis).

Other national organizations of physicians interested in tuberculosis were also formed—the short-lived American Academy of Tuberculosis Physicians, the American College of Chest Physicians (1935) and the American Association for Thoracic Surgery (1917).

The State of Connecticut soon followed Massachusetts in assuming responsibility for the care and treatment of tuberculous patients, especially for those with limited means. State-built and supported sanatoria were opened at Laurel Heights in Shelton (1910—Doctor William Stockwell, Superintendent and Medical Director), at Undercliff in Meriden (1910—Doctor James Dinnan), at Cedarcrest in Hartford (1910—Doctor Henry Clifton), at Uncas-on-Thames in Norwich (1911—Doctor Hugh Campbell) and The Seaside for children in Waterford (1919—Doctor John O'Brien). Doctor Stockwell soon moved to Cedarcrest, Doctor Edward J. Lynch came to Laurel Heights and Doctor Cole B. Gibson took over at Undercliff. These three, together with Doctor Campbell and Doctor O'Brien were responsible for the development, staffing and fine reputation of the five Connecticut state sanatoria. Doctor Kirby S. Howlett, Jr., subsequently Superintendent at Laurel Heights, was president of the ATS in 1949.

Originally these sanatoria consisted of large wooden shacks, as was then the custom, with open porches for fresh air. At first they were referred to as "State Farms for Consumptives"—a term hardly calculated to inspire confidence and hope. Subsequently they were replaced by modern brick infirmary buildings. These five Connecticut institutions provided a total of 1,658 beds for the treatment of tuberculosis. The full cost for the care and treatment of patients in those days was $25.00 a week. The patient was expected to defray the full cost, but those unable to do so (the majority) were charged a minimum of $4.00 a week; if they could pay nothing the State and town of residence assumed the full cost. Isolation and treatment at this time required many months and even years of bedrest, medical and nursing care. This far-sighted policy of the state enabled patients with limited means to enter a sanatorium and remain under treatment for as long as necessary. The operation of these sanatoria, as well as the chain of clinics throughout the state for ambulatory patients, was supervised by a seven person State Tuberculosis Commission, which set policy and provided liaison between them and the state legislature. The first chairman was John Foster. Doctor Stephen J. Maher of New Haven, an internationally known phthisiologist, was a member of the original commission from the time of its appointment by Governor Woodruff in 1907, served as its chairman from 1911 until his death in 1939, and played a prominent role in the construction and expansion of the sanatoria in Connecticut.

In addition to their therapeutic usefulness sanatoria were important as a means of isolating persons who were infectious. In Connecticut dangerous, recalcitrant patients could be committed by court order to a sanatorium until no longer deemed contagious—but this law was rarely needed or enforced.

Gaylord Farm Sanatorium in Wallingford opened its doors in 1904, with the beloved Doctor David Lyman as Director and with one nurse and six patients. This highly regarded private sanatorium, with both private and state support, grew to a capacity of 145 beds. Doctor Lyman was a founder of the NTA and its president in 1918. Later (1926) he served as president of the ASA.

William Wirt Winchester Hospital, the tuberculosis annex of the New Haven Hospital, opened in 1927 with Doctor Willard Soper as Medical Director. It was taken over by the U.S. Army from 1943 to 1945. Then, after experiencing difficulty in maintaining satisfactory occupancy of its 160 beds the annex was sold to the Veterans' Administration in 1948 and the West Haven V.A. Hospital was then constructed on the site. Later, from the tuberculosis service of this hospital, Doctor Nicholas D'Esopo and his colleagues contributed much to modern studies on the chemotherapy of tuberculosis.

In the beginning sanatorium treatment of tuberculosis was based on bedrest, with fresh air and nutritious diet—on the theory that this promoted healing of the disease. The patient with newly-discovered, active tuberculosis was first placed on *strict* bedrest, which included meals in bed, the use of bedpans, and bed baths. Patients were taught to cover their mouths with tissue when coughing or sneezing and to expectorate into sputum cups. Tissues and cups were collected and incinerated daily. As clinical, bacteriological and radiographic improvement took place increasing activities were slowly prescribed. First the patient was allowed up to the bathroom and then to meals; finally graduated walking exercise was begun, starting with fifteen minutes twice daily and increasing every two to four weeks by fifteen minutes until one hour twice a day was reached. Unfavorable reactions resulted in the resumption of strict bedrest. Discharge home was considered when the patient had been on one hour walking exercise for two months. Few patients were discharged before six months had passed and it was not unusual for advanced cases to remain in the sanatorium for one, two or more years. After discharge staged resumption of work was advised and rehabilitation programs were established for those patients previously employed in strenuous or dusty occupations. It was estimated that this prolonged, medically supervised rest program was successful in arresting the disease, at least temporarily, in 75% of minimal and 25% of far advanced cases of pulmonary tuberculosis. Sanatorium treatment reached its peak in the 1950's when there were 108,457 such beds for tuberculosis in the United States.

Because the results of treatment by bedrest, diet and fresh air were unpredictable and relapses were not infrequent, physicians attempted to devise methods to collapse and put at rest diseased areas of the lung in an effort to promote more certain and rapid healing and cavity closure. Back in 1821 a Scotch physician, James Carson, had proposed the idea of artificial pneumothorax, but was unsuccessful in two cases because of pre-existing pleural adhesions. It remained for Carlo Forlanini of Padua to describe, in 1894, the use of controlled, long-term pneumothorax to rest the lungs of patients with pulmonary tuberculosis. Since pleural adhesions frequently interfered with effective collapse, Hans Christian Jacobaeus of Sweden devised a method of cutting them, using an electrocautery inserted into the pleural space through one cannula, while viewing the adhesions by means of a cystoscope introduced in another (1922).

John B. Murphy, a Chicago surgeon, popularized the use of artificial pneumothorax in the United States at the end of the nineteenth century. He invented a simple, hydrostatic apparatus of movable water bottles for the injection of air and emphasized the value of chest roentgenograms in controlling the degree of collapse. His first cases, with reproductions of chest roentgenograms, were reported in the J.A.M.A. in 1898.

Successful pneumothorax treatment saved many lives. The author will never forget "pneumo days" at Laurel Heights Hospital, where he was a member of the staff. They were scheduled twice weekly in the operating rooms of the two infirmary buildings. A physician in sterile garb stood between two operating tables, a patient turned on his or her side lying on each table. One nurse prepped and draped the patients' chests while another operated the pneumothorax machine. The doctor attached a sterile needle and syringe to the tubing of the machine, plunged the needle through the chest wall into the pleural space and called out the initial pressure readings and the volume of air desired for the refill. Following the refill the final pressure reading was given and the needle withdrawn. The doctor then turned to the next patient—repeating the procedure for a total of approximately 25 patients per session. Most of the 100 or more in- and out-patients given pneumothorax refills each week preferred not to receive local anesthesia with novocain. Periodic refills were administered—at first twice a week and then every one or two weeks, depending upon the rate of absorption of the air. Selective collapse was maintained for one to two years and then the lung was allowed to expand by omitting the refills—hopefully without relapse of disease. Degree of collapse was monitored by fluoroscopy. Fluid in the pleural space, and rarely empyema, were the main complications. There were three or four patients who required aspiration of fluid at each session. The technique for the induction of pneumothorax was, of course, different and will not be described, but the skill of the physicians was such that significant inadvertent damage to the lung (bronchopleural fistula) rarely occurred.

An equally effective, but major, surgical collapse procedure was thoracoplasty—developed independently by Ernst Sauerbruch in Marburg in 1909 and Max Wilms of Heidelberg in 1911. Numerous surgeons devised a variety of techniques. The first thoracoplasty for pulmonary tuberculosis in America was performed by Doctor Robert G. LeConte at the Pennsylvania Hospital on November 11, 1911, upon the recommendation of Doctor Flick. The modern staged, paravertebral thoracoplasty was perfected by Doctor John Alexander at Ann Arbor, Michigan (c. 1936). He trained more thoracic surgeons than any other teacher of his time. Doctor John Barnwell, also at the University of Michigan, was a renowned teacher of chest physicians. Their students affectionately referred to them as "Doctor A and Doctor B.".

Other procedures designed to collapse and rest the lung were phrenic nerve paralysis, pneumoperitoneum, extrapleural and supraperiosteal pneumonolysis, oleothorax, wax and lucite ball plombage, scalenotomy and scalenectomy. Some were used more than others. They were meant to be effective in themselves or to prepare patients for the more definitive thoracoplasty. A few cases of pulmonary cavity drainage (cavernostomy) were attempted. Some of these surgical procedures are valuable in the management of occasional non-tuberculous and pulmonary infections, even today.

Progressive clinicians found that the chances of complete recovery from pulmonary tuberculosis were increased if collapse therapy was considered for every patient rather than relying solely on hygienic care (bedrest, diet and fresh air). In 1937 it was estimated that 75% of sanatorium patients were suitable for some form of collapse procedure.

With improved public health control, sanatorium care and these collapse procedures the death rate for tuberculosis in the United States dropped dramatically from about 300 per 100,000 population in 1880 to 69 per 100,000 in 1935. Nevertheless the new case rate remained high, around 300 per 100,000 per year. Thus, in Connecticut, even with a sizable number of beds for tuberculosis there was, for a time, a three-month waiting list for admission to a sanatorium.

Throughout the country health authorities began routine examination of contacts and Tuberculosis Associations were stressing early diagnosis. Chest roentgenograms were the best means for detecting early pulmonary tuberculosis and this led to mass surveys and the development of miniature radiography.

After it became known that some tuberculosis in humans was due to the bovine tubercle bacillus a widespread program to eradicate the disease in cattle was begun in the United States in 1917. Tuberculin testing of all herds became compulsory, slaughtering of infected animals was required, and the owners suitably reimbursed. By 1940 bovine tuberculosis had been practically exterminated in this country. An estimated 200,000,000 animals were tested in this program.

It was natural to expect that a bacterial vaccine might protect against the development of tuberculosis. In 1924 Albert Calmette and Camille Guérin at the Pasteur Institute developed such a vaccine from a non-virulent strain of bovine tubercle bacilli. Bacillus Calmette-Guérin (BCG), named for them, was used as a live vaccine in Europe, but there was never incontrovertible statistical evidence of its effectiveness. It did not become popular in the United States and its use in Europe waned after the Lübeck disaster, when seventy-six children died of tuberculosis after having been injected with virulent tubercle bacilli, due to a mix-up of cultures in the laboratory. One of the main objections to the use of BCG is that the vaccine, after injection, produces a state of allergy with a positive tuberculin skin test, thereby eliminating the diagnostic value of this test in the future. BCG is still being used in developing countries. It is estimated that 150,000,000 persons have received the vaccine over the years.

In never-ending search for specific therapy for tuberculosis a variety of chemotherapeutic and biological substances has been evaluated. In the first decades of the present century intravenous calcium gluconate, Sanocrysin (sodium and gold thiosulfate) and the sulfonamides were tried and found to be of no value. The honor of discovering an antibiotic effective against *Mycobacterium tuberculosis* belongs to a research microbiologist. In 1944 Selman Abraham Waksman and his co-workers at the New Jersey State Agricultural Experiment Station, B. Bugie and Albert Schatz, isolated streptomycin (SM) from *Actinomyces griseus,* a fungus found in the soil. That same year Doctors William Feldman and Corwin Hinshaw demonstrated the effectiveness of intramuscular injections of streptomycin in laboratory animals and, the following year, in thirty-four patients with tuberculosis. At last the medical profession had a really promising drug to use against this troublesome disease. But no one knew the proper dose, the required duration of treatment, or the possible side-effects. In 1946 six drug companies contributed 5,800 grams of still scarce and priceless streptomycin to the American Trudeau Society to permit controlled clinical trials. Doctor Kirby Smith Howlett, Jr. at Laurel Heights hospital was one of the eight country-wide investigators chosen to evaluate the drug on 382 patients. It worked! Symptoms subsided, roentgenograms showed clearing of parenchymal disease and tubercle bacilli disappeared from the sputum or became less numerous. Then came a reaction of despair! After a few weeks or months of injections of streptomycin *alone* the bacilli became resistant in many patients. A second drug was needed.

In 1946 Doctor Jorgen Lehmann in Göteborg, Sweden had reported favorably on para-amino-salicylic acid (PAS) in the treatment of both animals and human patients with tuberculosis. Two years later a group of British physicians made the remarkable discovery that streptomycin (a strong antituberculosis agent) and PAS (a weak one) when used together reduced the risk of development of drug-resistant organisms. But streptomycin toxicity was sometimes troublesome and there was still the need for an effective drug that was less toxic and which could be taken orally.

The bacteriostatic effect of isonicotinic acid hydrazide (INH) on tubercle bacilli was noted in the laboratories of Squibb, Hoffman-LaRoche and Bayer in 1951. INH was first used clinically at Sea View Sanatorium by Doctors Edward Robitzek and Irving Selikoff in 1951-52. Its success was picked up prematurely by the press and pictures of patients taking INH were shown dancing on the wards. But INH did satisfy the requirements for a potent, relatively non-toxic and inexpensive oral drug. Now, with three drugs—SM, PAS and INH—the problem of what combinations of drugs, doses, side effects and the optimum duration of treatment became more complex. In 1946 Doctors Arthur Walker and John Barnwell had initiated cooperative Streptomycin Conferences by the hospitals of the Veterans Administration and the Armed Forces. Within a few years these became Annual Conferences on the Chemotherapy of Tuberculosis and, eventually, Pulmonary Disease Research Conferences. The staffs of these federal hospitals, with leading specialists in tuberculosis and pulmonary diseases acting as consultants, conducted multiple controlled trials, first of SM, PAS and INH and then of other antituberculosis drugs as they became available. The results of these studies were reported at the annual meetings which were open to all interested physicians, surgeons and bacteriologists. In this manner the rapid dissemination of findings, both positive and negative, was made possible. This massive, prospective, cooperative effort, unique in the annals of clinical pharmacology and bacteriology, was concluded in 1972.

Additional reserve drugs were needed to treat recalcitrant patients, those who had relapsed with resistant organisms and those few patients who could not tolerate SM, PAS and INH. In the twenty years after 1950 eight new effective drugs against tuberculosis were introduced, the last two being ethambutol (EMB) and rifampin (RMP). Now clinicians had available a formidable armamentarium of medications which, when used intelligently and taken consistently by a patient for the proper length of time could guarantee lifetime control of the disease in 95% of cases. For what other condition can such a claim be made?

For the first time chemotherapy allowed tuberculous lung tissue to be removed surgically with a minimal risk of postoperative spread of tuberculous infection. In the 1950's it was thought that so-called "clean" cavities, remaining in the lung after conversion of sputum to negative by chemotherapy, should be resected to protect against subsequent relapse of disease. However, the experience gained from lengthy follow-up showed that this was not necessary and resection is no longer routinely performed in these cases.

By the late 1950's it was becoming evident that, because of the splendid results from chemotherapy, sanatorium care was no longer needed for the great majority of patients with tuberculosis. These institutions, which had played such an important role in tuberculosis control before chemotherapy were gradually phased out or converted to other uses. Now tuberculosis is treated at home or in general hospitals. Even more-than-minimal cases require only a brief period of inactivity before resuming a normal life style. Ironically, Trudeau Sanatorium, which was the first to open, was also the first to close—in 1954.

Valid argument can be made for the maintenance of a small number of beds for care, by experienced physicians, of those few tuberculous patients with special problems or who present the greatest public health hazard (for example—recalcitrant, careless or psychotic patients, alcoholics and drug addicts, those with resistant organisms and far advanced disease and persons residing in crowded, substandard quarters). Such a unit of thirty beds at Laurel Heights Hospital now serves the entire State of Connecticut, whereas in the 1930s almost 2,000 beds in the state were always occupied.

Throughout the world supervised intermittent (vs. daily) and shorter and less expensive chemotherapeutic regimens are now being evaluated intensively. These would be of especial value for recalcitrant patients and for the developing, poorer or third world countries.

We have come a long way since the days of Auenbrugger and Laënnec. The tools to eradicate tuberculosis are available, but unfortunately socioeconomic factors and human nature can be expected to prevent us from reaching this ultimate goal in the near future.

*Acknowledgement: The author is indebted to Doctor Gustaf E. Lindskog for his helpful suggestions during the preparation of this manuscript and to Marcia James of the Trudeau Institute, the staff of the Connecticut State Library and Jean Fuller of the Finkelstein Library of St. Mary's Hospital for their assistance in obtaining records.*

## REFERENCES

Alexander J: The Collapse Therapy of Pulmonary Tuberculosis. Springfield, Ill. Thomas, 1937

Brown L: The Story of Clinical Pulmonary Tuberculosis. Baltimore. Williams and Wilkens, 1941

Burke RM: An Historical Chronology of Tuberculosis. Springfield, Ill. Thomas, 1955

Dubos R and Dubos J: The White Plague. Tuberculosis, Man and Society. Boston. Little, Brown and Co., 1952

Glenn WWL, Liebow, AA and Lindskog GE: Thoracic and Cardiovascular Surgery, with Related Pathology. New York. Appleton - Century - Crofts, 1975

Keers RV: Pulmonary Tuberculosis. A Journey down the Centuries. London. Ballière Tindall, 1978

Meade G: Edward Livingston Trudeau, M.D. Tubercle, *53:* 299, 1972

Myers, JA: Tuberculosis and other Communicable Diseases. Springfield, Ill. Thomas, 1959

Trudeau, EL: An Autobiography. Philadelphia. Lea and Febiger, 1916

Wilson, JL: History of the American Trudeau Society. Am Rev. Resp Dis., *119:* 177, 327, 521, 1979

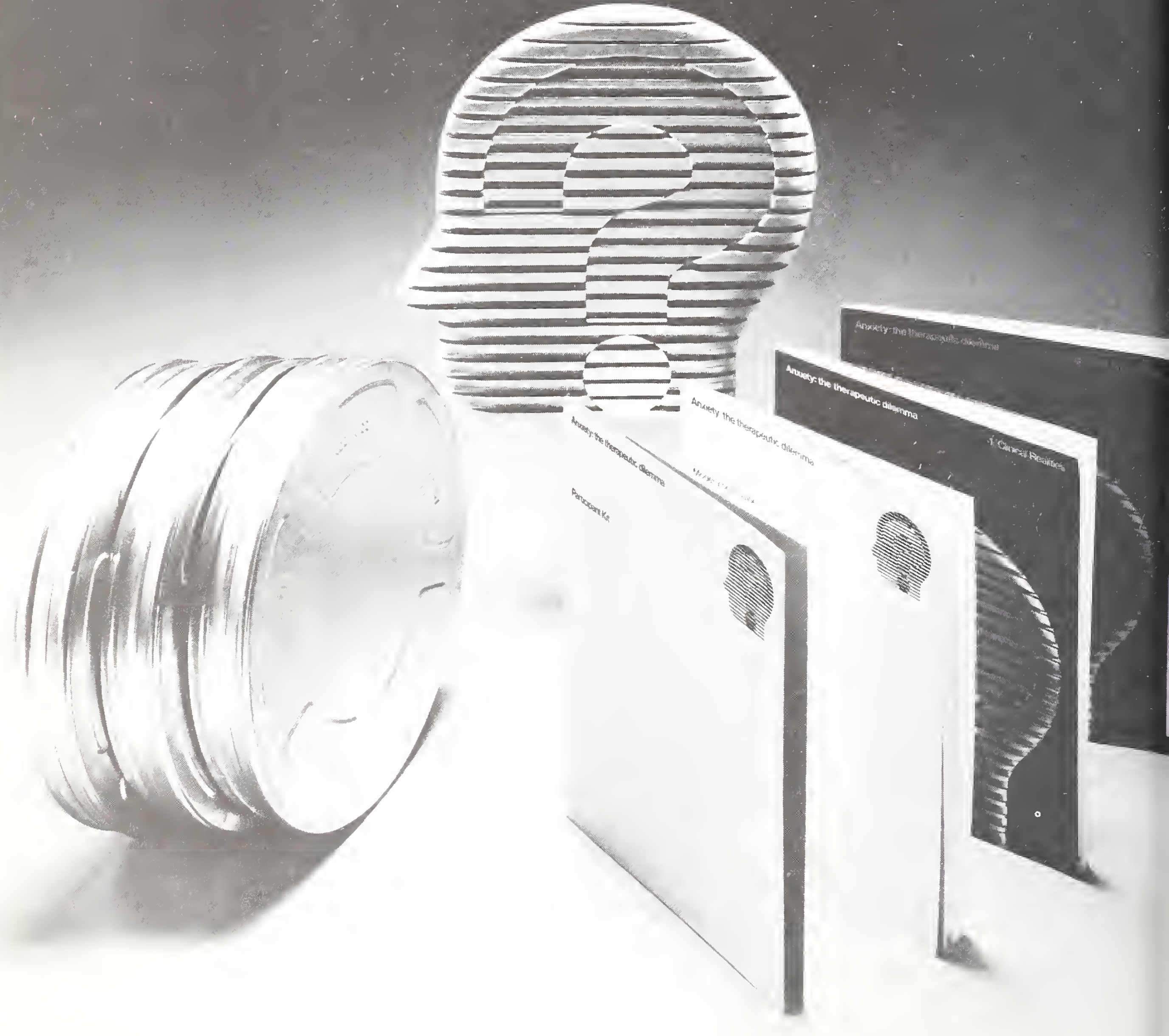
New Columbia Encyclopedia, Harris, WH and Levey, JS. Editors. New York. Columbia University Press, 1975

New Haven Register: Stephen J. Maher obituary. June 7, 1939, page 1

Now. . .today's issues in anxiety management are confronted in a unique program for primary care physicians

Anxiety: the therapeutic dilemma

Multimedia Continuing Education Program


Anxiety: the therapeutic dilemma
Anxiety: the therapeutic dilemma
1. Clinical Realities
Anxiety: the therapeutic dilemma
Anxiety: the therapeutic dilemma
Participant Kit

# Hospitals Can Require Liability Insurance

MICHAEL E. REED, J.D.

The hospitals at which you have surgical privileges may have imposed a requirement that you carry professional liability insurance at your own expense as a condition for retaining or renewing your staff privileges, and that initial applicants for clinical privileges be similarly insured. Such a requirement has been challenged in several jurisdictions, but the courts have generally held it to be valid.

The courts have reasoned that the hospital has a legitimate interest in protecting itself and the patients it serves. More specifically, the courts have found such a requirement to be fair and reasonable because it facilitates orderly fiscal management of the hospital and assures that negligently injured patients are justly compensated.

## Insurance Requirement

In *Pollock v. Methodist Hospital,*[1] a Louisiana federal court upheld a requirement that each physician practicing in the hospital provide a certificate of insurance with minimum limits of $1 million. The court stated that the hospital had a legitimate concern to assure that it did not carry the entire burden of liability arising from a physician's negligence:

"Requiring its staff physicians to carry insurance and to submit proof to the hospital of that fact is surely a reasonable exercise of financial responsibility on the part of the hospital."[2]

The Arizona Supreme Court has also endorsed the rationale that a hospital has a managerial interest sufficiently legitimate to support adopting such a rule. In *Holmes v. Hoemako Hospital,*[3] the court upheld a hospital bylaw requiring staff members to maintain insurance of a kind and in an amount required by the staff and approved by the governing body. The amount set by the staff and approved by the governing body was $250,000. In vacating the decision of the State Court of Appeals, the Arizona Supreme Court stated:

"We cannot ignore the realities of modern procedural practice. If a patient is injured while in a hospital, regardless of who is at fault, the hospital will almost always be joined as a co-defendant. Despite the outcome of such an action, the hospital must expend valuable financial resources in its own defense, and will, if innocent of wrong-doing, be more likely to recover its expenses from the tortfeasor physician, if that physician is insured."[4]

The *Holmes* court did not adopt the argument of a dissenting Justice, who reasoned that the requirement compelled payment of two insurance premiums to cover a single loss, resulting in a greater cost of care to patients in the depressed area served by the hospital.

The rationale that the patient is protected by imposition of such a requirement was articulated in more detail by the Indiana Court of Appeals in *Renforth v. The Fayette Memorial Hospital Association, Inc.*[5] The medical staff bylaw there in question required that every physician seeking appointment or reappointment to the medical staff show evidence of at least $100,000 professional liability insurance coverage.

The court noted with approval the following reasons set forth by the hospital as its basis for passing the bylaw:

1. If both Hospital and a physician were named defendants in a law suit, Hospital desired assurance that the physician could contribute toward costs of defending against such an action;

2. Hospital felt it was showing due regard for the patients it serves by requiring insurance coverage for the doctors who might become liable to the patients.

3. By imposing the requirement on the physicians who used Hospital's facilities, Hospital was in a better position to assure insurance coverage for itself, and at a lower premium.[6]

## Amount of Coverage

The courts have thus permitted hospitals not only to require that physicians carry current liability insurance coverage, but also to specify minimum amounts of required coverage. The *Pollock* court specifically

---

MICHAEL E. REED, J.D., Attorney with the firm of Vedder, Price, Kaufman and Kammholz, Chicago, IL.

*Reprinted with permission from the* Bulletin of the American College of Surgeons, *July 1980.*

noted that: "The hospital must be afforded wide discretion in setting a proper amount."[7]

In some situations, the professional liability insurance requirement may be reasonable on its face but unreasonable in its application. For example, a physician might be able to show that he is unable to obtain insurance or that he cannot afford the premiums. Under these circumstances, the hospital may have a fiduciary obligation to its patients to waive the requirement in order that needed physician services be available to them. However, in none of the cases discussed has such a defense been successfully asserted.

Because of the potential for unfair application of the requirement, courts have stressed that the physician should be entitled to a hearing at which he may submit evidence on his behalf to show why the rule is unreasonable per se, or unreasonable as applied to him. In *Pollock,* for example, the physician was given a full opportunity to be heard before a special committee of the hospital Board of Directors at which his lawyer was present and presented arguments on the doctor's behalf. Further, in the *Holmes* case, Dr. Holmes unsuccessfully attempted to persuade the hearing board that because of his special circumstances he should be exempt from the requirements. Dr. Holmes was the only physician serving the community, and the result of his loss of privileges was that community residents could not be admitted to the hospital. The court, however, noted that because Dr. Holmes had not asserted an inability (financial or otherwise) to obtain insurance, the unfortunate result was his voluntary choice.

In summary, a hospital rule which requires a physician to maintain professional liability insurance as a condition to obtaining and retaining medical staff privileges should be upheld as valid provided the physician has been given an opportunity to be heard and to show why the rule is either unreasonable per se or unreasonable as applied to him.

## REFERENCES

1. 392 F. Supp. 393 (E.D. La. 1975)
2. *Id.* at 397
3. 117 Ariz. 403, 573 P. 2d 477 (1977)
4. *Id.* at 405, 573 P. 2d at 479
5. 383 N.. 2d 368 (1978), *cert. denied,* 100 S. Ct. 273 (1979)
6. *Id.* at 376
7. 392 F. Supp. at 397

**ELMCREST**

**A COMPREHENSIVE MENTAL HEALTH TREATMENT CENTER FOR ADULTS AND ADOLESCENTS**

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Allen Cohen,** M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman,** M.D., F.A.P.A.
*Medical Director*
**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
☐ GERIATRIC GUIDANCE CENTER
☐ DAY HOSPITAL

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

# Legal Update: A Maryland Peer Review Case

WILLIAM P. ISELE, J.D.

In an earlier article[1] a decision of the Maryland Court of Special Appeals was analyzed as illustrative of certain legal principles important to members of peer review committees. That intermediate level appellate court denied the state medical disciplinary board access to hospital review committee records. At issue were two provisions of Maryland statutory law. The first, Section 134A, provides that the proceedings, records, and files of a medical review committee are not available for discovery in certain "civil actions," such as professional liability suits. The second, Section 130A, establishes the Commission on Medical Discipline, and provides in part that "minutes and notes taken in the course of determining the denial, limitation, reduction or termination of staff privileges" should not be subject to review of discovery by "any person."

The intermediate appellate court ruled that the first statutory provision did not protect committee proceedings from Commission discovery, because proceedings before the Commission were not "civil actions." That court did rule, however, that the Commission was prevented from obtaining "minutes and notes" by the second provision.[2]

The highest appeals court in Maryland has issued a subsequent opinion in this case. The Court of Appeals agrees that proceedings before the Commission on Medical Discipline are not "civil actions." Therefore, Section 134A does not prohibit Commission access to such materials. This court disagrees with the lower court, however, on the issue of whether Section 130A prevents Commission access to "minutes and notes" of review committees. The court opines that the Legislature did not envision the Commission as a "person" who should be prevented from obtaining such notes. Rather, the court said, "person" refers to "outsiders, such as former patients." It is from these, not the Disciplinary Commission, that minutes and notes relating to disciplinary proceedings are protected.[3]

This view, although allowing access the lower court did not, does not undermine or contradict the principles discussed in the previous review of the case. The goal of the legislative provisions and of the court decisions is to ensure high quality peer review leading to better health care. It should have no "chilling effect" on conscientious physicians to know that minutes and notes of their peer review sessions are available to a state disciplinary board. In fact, peer review committees should work closely with such boards to ensure proper treatment of incompetent or disabled physicians.

---

WILLIAM P. ISELE, J.D., Assistant Director of the Health Law Division, Office of the General Counsel, American Medical Association, Chicago, Illinois.

*Reprinted from CME Newsletter, February, 1980 with permission of the AMA.*

REFERENCES

1. "Peer Review: A Maryland Case," *Connecticut Medicine* 42:679, 1978
2. *Cocco v. Maryland Commission on Medical Discipline,* 384 A2d 766 (Md App. 1978)
3. *Unnamed Physician v. Commission on Medical Discipline,* 400 A2d 396 (Md. 1979)

FOR OPTIMUM NUTRITION

# CEVI-BID

## VITAMIN C MICRO-DIALYSIS SUSTAINED RELEASE

## 500mg. CAPSULES

## PROVIDES A "MORE SATISFACTORY TREATMENT..."[1]

### HERE'S WHY

**ORDINARY VITAMIN C INTAKE:**
Results in "peaks and valleys"
(wasteful renal excretions at high levels and less than optimum amounts of vitamin C at low levels)
Absorption of enteric-coated vitamin C tablets is also unpredictable.

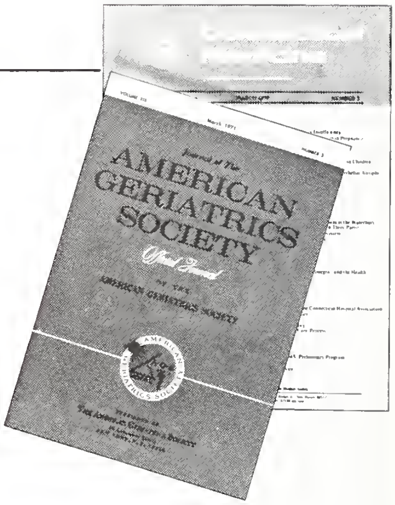
> "Through a special micro-dialysis release pattern we find it CEVI-BID far better therapy than tablets for the patient."[2]

**CEVI-BID 500mg CAPSULES:**
Convenient b.i.d. dosage for more predictable sustained vitamin C blood and tissue levels all day and night. No "peaks and valleys."

> "A special advantage of this prolonged absorption period results in the maintenance of blood levels throughout the day and night."[2]

CEVI-BID's unique micro-dialysis principle provides release of 500mg of vitamin C during a 12 hour period AT A SMOOTH, UNIFORM RATE.

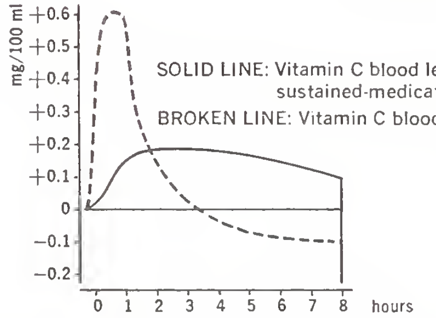
> CEVI-BID..."provides a more satisfactory treatment of disorders requiring administration of vitamin C in repeated doses of relatively small amounts."[1]



**WHENEVER VITAMIN C IS INDICATED...PRESCRIBE CEVI-BID**

Dosage: For continuous 24 hour therapy, one capsule after breakfast and one after supper.

**Available Only Through The Medical Profession**



SOLID LINE: Vitamin C blood levels obtained with sustained-medication capsules (CEVI-BID).
BROKEN LINE: Vitamin C blood levels obtained with tablets.

*Comparison of ascorbic acid blood levels after administration of 1 gram of ascorbic acid in effervescent tablet form and 1 gram of CEVI-BID (2 capsules). *Adaptation

Samples on Request
**GERIATRIC PHARMACEUTICAL CORP.**
397 Jericho Turnpike, Floral Park, N.Y. 11001

1. Riccitelli, M.L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20:34, 1972.
2. Riccitelli, M.L.: Vitamin C—A Review. Conn. Med. 39:609, 1975

DEVELOPERS AND SUPPLIERS OF GER-O-FOAM • GAYSAL • B-C-BID

# Patient Package Inserts

AMERICAN MEDICAL ASSOCIATION

In the September 12, 1980 *Federal Register,* FDA published its final rule regarding general procedures relating to the development and distribution of future patient package inserts (PPI) for prescription drug products. To be affected in the near future are 10 named drugs and drug classes. *The regulations will not be effective with respect to a particular drug until 180 days after publication of a notice in the Federal Register applying the regulations to that specific drug (or drug class).* This memorandum will highlight the final PPI rule and review existing regulations.

## New PPI Rule

Generally, PPIs are to be provided by dispensers, including physicians, except as noted below:

- the physician interdict—a physician prescribing a drug may direct (in handwriting on the prescription or orally to a pharmacist) that the dispenser withhold the PPI, and it can be withheld unless the patient specifically requests it. (Dispensing physicians are encouraged to provide the PPI, but need not do so unless the patient specifically requests it.);
- the emergency treatment exemption—a PPI need not be given to patients who receive a drug in the course of emergency treatment (in or out of an institutional setting);
- the health care institution options—health care institutions are required to devise a system to make PPI information available to patients on request; and
- PPIs need only be provided for the initial dispensing of the drug, not for refills. The PPIs will be provided to dispensers by each manufacturer and the PPI text will be included in the package insert (and PDR).

Published with the final rule were the FDA "guideline" PPIs for the 10 drugs and drug classes for which patient labeling (PPIs) will be required during the "initial program": ampicillins, benzodiazepines, cimetidine, clofibrate, digoxin, methoxsalen, propoxyphene, phenytoin, thiazides, and warfarin. It is intended that a three-year evaluation will take place as to these drugs before PPIs are extended to apply to other drugs.

AMA is preparing comments on each of the "guideline" PPIs identified above. Other persons interested in commenting may write to the following address to receive copies of the documents and may submit comments before October 27, 1980: FDA Commissioner, Jere E. Goyan, Ph.D., c/o Hearing Clerk (HDA-305), Food and Drug Administration, Room 4-62, 5600 Fishers Lane, Rockville, MD 20857.

## Current PPI Rules

The new PPI rule does not change the current requirements regarding prescription drugs for which PPIs may already have to be dispensed pursuant to regulations in effect for some time. Drugs covered include:

- Isoproterenol inhalation drug products
- Oral contraceptive drug products
- Oral postcoital contraceptive drug products
- Medroxyprogesterone acetate injection drug products
- Intrauterine devices
- Estrogenic drug products
- Progestational drug products

The existing regulations on estrogenic and progestational drug products, for example, require that the patient labeling be "dispensed" to *all* (but cancer therapy) *patients each time the drug is dispensed.* The requirement pertains to dispensing physicians, as well as to pharmacists, and to institutional and outpatients. Additionally, the existing format and contents of PPIs for these regulated products will remain unchanged, though the new PPI rule and FDA "guideline" PPIs for the (10) drugs to be covered call for the dissemination of substantially altered patient labeling.

### PPI Physician Q & A

1. *Q.* Must I give a PPI to my patient each time I dispense a drug for which a PPI is printed?

   *A.* That depends on the drug. If it is a drug for which a PPI is available but not yet *required* by FDA (i.e., propoxyphene), dispensing of the PPI is discretionary. Even when the new FDA rule is explicitly extended to each of the 10 drugs to be covered, physician dispensing of a PPI will still be discretionary *unless the patient requests it.*

   Drugs such as estrogenic and progestational products for which PPIs are *now required* by FDA should be dispensed with the approved PPI.

2. *Q.* Who will provide the PPIs?

   *A.* Drug manufacturers and distributors are required to provide dispensers with adequate supplies of PPIs. The PPI text will also be incorporated into the package insert (and PDR).

3. *Q.* Will foreign language PPIs be available?

   *A.* FDA has urged drug manufacturers to create PPIs written in Spanish as well as English. However, providing the English version of a PPI is sufficient to comply with the current and new PPI rules.

4. *Q.* When the new rule becomes effective with respect to a particular drug, (a) What must I do in order to assure that the patient receives the PPI? (b) Can I direct that a pharmacist *not* dispense the PPI to a particular patient?

   *A.* (a) Nothing. The pharmacist must dispense the PPI unless directed otherwise by the prescriber. (b) A prescriber may direct over the phone or *in his own handwriting on the prescription form* that a PPI *not* be dispensed. The PPI will not be dispensed, unless the patient specifically requests it from the pharmacist.

5. *Q.* What about my hospitalized patients?

   *A.* Health care institutions, including hospitals and nursing homes, will be required to inform patients of the availability of PPI information, but need only supply it *on request.*

6. *Q.* Are there penalties for not dispensing required PPIs?

   *A.* Yes. Failure to dispense a PPI for which there is an established (non-discretionary) dispensing requirement could be treated by FDA as the dispensing of a "misbranded" drug. Penalties for distributing misbranded drugs are provided in the Federal Food, Drug, and Cosmetic Act.

   Remember, however, that physician dispensing of PPIs under the new rule will be discretionary. Physicians are encouraged by FDA to use the PPI in the course of patient instruction, but are not required to use the PPI unless the patient requests it.

---

A SPECIALTY SCREENING SYSTEM USED IN MICHIGAN to determine prevailing charges and allowable fees for physicians caring for Medicare patients is illegal, a U.S. District Court judge ruled. He issued a mandatory injunction directing the federal government and Michigan Blue Cross-Blue Shield, the state's Medicare carrier, to provide that all physicians be included in a single screen, separate from the screen for chiropractors, podiatrists, and dentists.

The establishment of separate screens segregating non-board certified family physicians from all other physicians violates the Medicare law, Judge Horace W. Gilmore said. The Michigan screening system is similar to those used by most of the nation's Medicare carriers. The suit was filed last year by the Michigan Academy of Family Physicians against the Dept. of HHS and Michigan Blue Cross-Blue Shield. Sam Nixon, M.D., president of the American Academy of Family Physicians, said he hoped the ruling "will cause other states to eliminate unfair reimbursement mechanisms and make it unnecessary for us to bring any other suits."

—AMA *Newsletter,* Vol. 13, No. 1, January 12, 1981

# Current Medicolegal Issues

## THE CITATION

### Diabetic Sues Physicians for Prescribing Cafergot

A directed verdict in favor of several physicians, a hospital and a clinic should be reversed, a federal appellate court in Louisiana ruled.

A patient was referred to the clinic by the VA on January 1, 1973. He was found to be suffering from a disease of the pancreas and underwent a 95 per cent pancreatectomy, cholecystectomy and splenectomy. The patient continued to suffer symptoms of pancreatitis, and he underwent a complete pancreatectomy on April 12, 1973. After the operation, he had diabetes mellitus. He was treated as an outpatient by an endocrinologist and was prescribed Cafergot for migraine headaches on several occasions.

In June, his motorcycle fell on his foot, and it became painful, swollen and discolored. An arteriogram was performed, and it showed diffuse vasospasm with potency to the foot. The treating physician later performed a left lumbar sympathectomy to increase blood supply to the affected foot. During the treatment for lack of blood supply to the foot various physicians prescribed Cafergot for the patient's migraine headaches. Cafergot was contraindicated in peripheral vascular disease, according to the package insert accompanying the drug.

The trial court directed a verdict for the physicians, clinic and hospital in a malpractice suit. On appeal, the appellate court reversed the directed verdict. Although there was no expert testimony on the standard of care in the community, there was sufficient objective evidence from which the jury could infer that the physicians did not comply with the standard by prescribing Cafergot when the patient was suffering from peripheral vascular disease.

The court reversed the trial court's decision and remanded the case for further proceedings.—*Hemingway v. Ochsner Clinic,* 608 F.2d 1040 (C.A.5,La., Dec. 27, 1979)

### Radiologist Sues Hospital for Nonrenewal of Contract

A hospital gave a radiologist the required notice of nonrenewal of his contract to provide radiological services, a Georgia appellate court ruled.

The radiologist signed a three-year renewable contract that began on January 1, 1975 and ended on December 31, 1978. The contract provided that it was automatically renewed for three years unless either party gave the other at least 120 days' written notice prior to the expiration of the three-year period. The radiologist sued for breach of contract, and a trial court granted judgment for the hospital.

Affirming the decision, the appellate court said that the hospital gave the proper notice of nonrenewal as required by the contract. The court rejected the radiologist's contention that he could not be terminated without prior consultation and a hearing. The contract provision requiring consultation and a hearing did not apply to nonrenewals of the contract, but only to termination during the term of the contract, the court said.—*Kushner v. Southern Adventist Health & Hospital System, Inc.,* 260 S.E. 2d 381 (Ga. Ct. of App., Sept. 20, 1979)

*—THE CITATION, Vol. 41, No. 1/April 15, 1980*

### Washington Supreme Court Decides Case on Physician's Assistants

A regulation authorizing physician's assistants to issue prescriptions for medication and write medical

---

*THE CITATION is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.*

orders for patient care did not exceed the authority of the Board of Medical Examiners, the Washington Supreme Court ruled.

The 1971 statute recognized the physician's assistant as a new health care professional and authorized the Board of Medical Examiners to adopt rules and regulations governing the extent to which they may practice medicine. In 1977, the Board adopted a regulation authorizing them to issue prescriptions for medications and write medical orders for patient care. The state nurses association challenged the regulation, claiming that it altered the rules governing nursing activity and that only the State Board of Nursing could make rules affecting nursing. Nurses would have to carry out prescription and medical orders written by physician's assistants and doing so would exceed their legal authority, the association claimed. A trial court agreed with the nurses association and enjoined the Board from implementing the regulation.

Reversing that decision, the Washington Supreme Court said that physician's assistants were agents for their supervising physicians, not independent practitioners. Thus, each order given by an assistant was considered as coming from the supervising physician so that the regulation did not alter the nurses' position in any way, the court said. The statutes authorizing physician's assistants indicated a legislative attempt to create an agency relationship. One provision stated that they could practice medicine only under the supervision and control of a physician, and another stated that a physician retain professional and personal responsibility for acts of a physician's assistant. —*Washington State Nurses Association v. Board of Medical Examiners,* 605 P.2d 1269 (Wash. Sup. Ct., Feb. 7, 1980)

## Medical Liability Panel Must Clarify Findings

A medical liability panel must make a decision on each claim in a medical malpractice action, the Arizona Supreme Court ruled.

A physician performed cataract surgery on a patient on December 31, 1975. As a result of that operation, the patient filed a malpractice action alleging three acts of malpractice: (1) failure to obtain informed consent, (2) negligent surgical treatment, and (3) negligent postoperative care. The case was submitted to a Medical Liability Review Panel, which made only a general finding in favor of the patient.

In fact, the Panel had unanimously found for the physician on two of the three claims and was split on the claim of negligent postoperative care, two for the patient and one for the physician. When the physician was unsuccessful in having the Panel's results clarified, he asked the trial court to order it to make a finding on each claim. The trial court denied the motion, and the physician appealed.

Remanding the case to the trial court, the Arizona Supreme Court said the trial court should order the Panel to make a finding on each of the three claims of negligence. Since the Panel's finding was admissible in a subsequent lawsuit, the general finding in favor of the patient would deceive the jury into believing that the Panel agreed that there was merit to each claim or cause of action, the Supreme Court said.—*Barnet v. Superior Court of Maricopa County,* 605 P.2d 445 (Ariz. Sup. Ct., Dec. 20, 1979; rehearing denied, Jan. 29, 1980)

## No Certificate of Need for Cardiac Surgery Unit

A hospital did not need a certificate of need to build a cardiac surgery unit that would cost less than $150,000, the Kansas Supreme Court ruled.

The state of Kansas filed suit to enjoin a hospital from implementing an open heart surgery unit without first obtaining a certificate of need. A trial court denied the state's request for a permanent injunction, and the state appealed.

Affirming the decision, the Supreme Court said that the hospital's proposed cardiac surgery unit did not need a certificate of need. The hospital's architect testified that the cost would be $48,291.36, and the Kansas statute on certificates of need did not require a certificate for capital expenditures costing less than $150,000. The Supreme Court added that the trial court did not err in excluding testimony on the hypothetical increased costs resulting from implementation of a second cardiac surgery unit.—*State of Kansas ex rel. Metzler v. Sisters of Charity of Leavenworth Health Services Corporation,* 605 P.2d 100 (Kan. Sup. Ct., Jan. 19, 1980)

*—THE CITATION, Vol. 41, No. 5, June 15, 1980.*

# The President's Page

Physician's fees have always been a sensitive subject in medical societies. Traditionally, fees have been considered a private matter between physician and patient with only grossly inappropriate charges or services subject to peer review. Medical ethics dictate that physicians render the best care possible regardless of remuneration—a principle we trust will always be embraced by physicians—and that fees should be commensurate with the ability of the patient to pay.

The rapid growth of prepayment plans, health insurance, the Blues, and government agencies, particularly Medicaid and Medicare, are changing these traditional financial relationships. Almost 80% of all fees are now paid in whole or in part by third parties. These payment systems have increased the availability of care and spread the burden of expensive illness and, incidentally, boosted the incomes of physicians, particularly in the surgical specialties. They have also increased the cost of medical care by taking their share of the medical dollar and by reducing competition and, of prime importance to us, have introduced a third party into the physician-patient relationship. Those who supply the money, whether it be Community Chest or the federal government, inevitably expect to have a say in how the money is spent.

As dramatic as have been the changes of the past three decades, there are reasons to expect even more radical changes in the near future. Medicare is costing billions more than anticipated. There is dissatisfaction with the federal role in Medicaid, which is also astronomically expensive. HMO's are increasing and the Blues are undergoing significant changes in their policies and plans. There is a strong demand for further federal involvement in catastrophic insurance. Hopefully, with physician and medical society support, changes will result in simple payment systems that are less expensive to administer, that are not inflationary nor too expensive for the patient and the tax payer, that will not interfere with patient's rights or care, and that compensate physicians fairly and adequately.

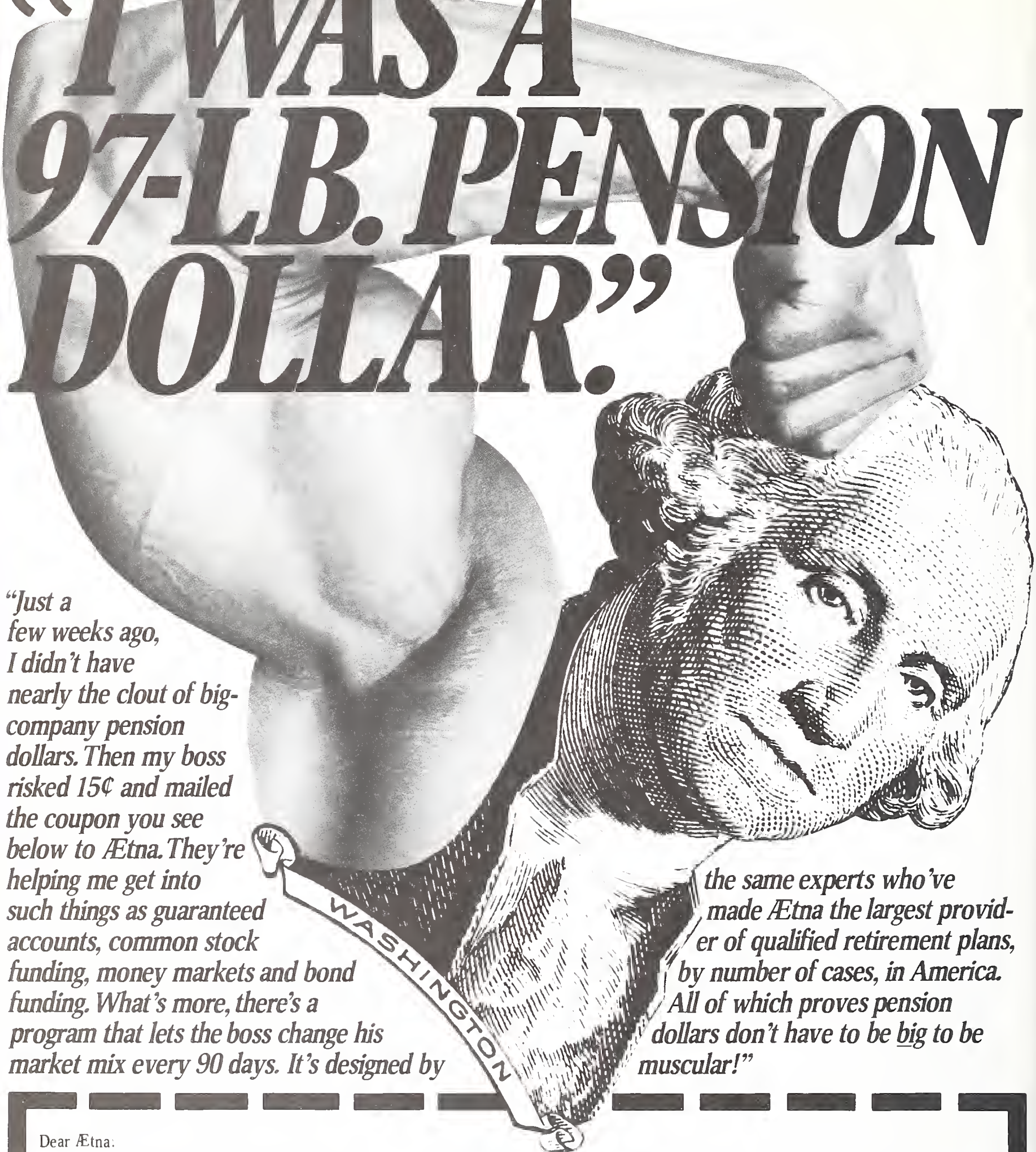
Whether we like it or not, it seems inevitable that the future of the third-party payment systems will include increasing emphasis on fee schedules. Medical societies are not unions who negotiate fees and rates, nevertheless we must be prepared to influence, as much as the law allows, fee schedules whether they be in HMO's or in Medicare. We have already been involved to some extent in negotiating schedules. Relative value scales, physician advisory committees and choice of non-participation have all been forms of negotiation with the Blues and with welfare. Closed panel HMO's have negotiated schedules and even IPA's have negotiable limits. The AMA did play an influential role in the establishment of Medicare's U.C.R. plan, undoubtedly not anticipating the bureaucratization of the original concept.

No issue can be more divisive than the question of fees. We have only to recall the tumultuous relationship through the years between CSMS and CMS or look to the north and recall how the Canadian Medical Society was rendered ineffective by the split between specialists and non-specialists over remuneration. It is very easy for certain groups, particularly the sub-specialties, to fall into the trap of separate negotiations. The welfare of the sub-specialist cannot be divorced from the welfare of the researcher or the college professor or the family physician. How much we influence the future of health care delivery and third-party payment systems will depend on how much we work together. Physicians are a very small minority and medicine's only real strength lies in unity. To divide and splinter the profession over questions of fees is the surest way to be conquered by those who wish to control medicine. Differences in political and economic philosophies are best worked out within the Society where each of us and each of our specialties work to direct the Society in the way we believe will best attain the goals we have set for our profession.

W. Raymond James, M.D.
President

UNIVERSITY OF MARYLAND

# “I WAS A 97-LB. PENSION DOLLAR.”



*“Just a few weeks ago, I didn’t have nearly the clout of big-company pension dollars. Then my boss risked 15¢ and mailed the coupon you see below to Ætna. They’re helping me get into such things as guaranteed accounts, common stock funding, money markets and bond funding. What’s more, there’s a program that lets the boss change his market mix every 90 days. It’s designed by the same experts who’ve made Ætna the largest provider of qualified retirement plans, by number of cases, in America. All of which proves pension dollars don’t have to be big to be muscular!”*

Dear Ætna:

Yes, I want my pension dollars to have clout, too! I understand I don’t have to be incorporated and that you can show me how to legally contribute different tax-deductible percentages of salary to myself and my employees. ☐ Send me your free literature. ☐ Have a representative contact me. Also tell me how I can convert without charge my developed assets into lifetime payouts for me and/or my employees. Mail to: Director of Pensions, Profit Sharing and IRA Sales, Ætna Life Insurance and Annuity Company, D309, 151 Farmington Avenue, Hartford, CT 06156
Tel.: (203) 273-6246

Print name______________________________
Title____________________ Company______________
Address_______________________________
City____________ State______ Zip______ Phone number__________

Ætna
LIFE & CASUALTY

This advertisement should not be construed as an offering of a variable annuity product. Such offering can only be made through a prospectus. Ætna Life Insurance and Annuity Company, one of the Ætna Life & Casualty companies.

# Reflections from the Dean's Office

## Searching and Fishing

ROBERT U. MASSEY, M.D.

Medical school search committees, at their first meetings, before the letters are sent to other schools and the advertisements are written for the proper journals, go through the exercise of agreeing upon "the kind of person we are looking for". Everyone knows that a department chairman or a division head must be an exemplary clinician, a popular teacher, a medical scientist with a respectable bibliography, and must have had important administrative responsibilities. The ideal age is discussed and left unresolved; everyone insists that sex doesn't matter. Then someone will speak of walking on water, and a few will laugh. At some point, the *compleat* physician will be mentioned by a committee member with clinical leanings; he will indicate the italics by splitting the diphthong, thereby making an allusion to the *Compleat Angler.*

Izaak Walton lived in that same great and troubled century that saw Harvey, Sydenham, Bacon, Browne, Willis, Boyle, Descartes, Leeuwenhoek, and all the others who helped with the birth of the modern world. His long life began in the reign of Elizabeth and ended in that of Charles II, his good friend to whom he was so loyal during the hard years of Civil War and of Cromwell with his black suit and his Parliament of Saints. Like Sir Thomas Browne in Norwich, who delighted to see it all end with the hanging and burning of Cromwell in effigy in the streets, Walton celebrated that happy May 29, 1660 with an "Eglog":

> "The king! The king's returned! And now
> Let's banish all sad thoughts and sing:
> We have our laws, and have our king."

The author of the *Compleat Angler* lived to a great old age, and in his will, which he wrote some four months before his death, he describes himself as "in the neintyeth year of my age, and in perfect memory, for which praised be God." Even for that century when death, especially death in childhood, was so common, Walton was more unfortunate than most: he lost his first wife and all their seven daughters, and the first child of his second wife. Of the coming of the Calvinists and Cromwell, he wrote, "I saw and suffered by it." Yet all of his contemporaries observed that he was the happiest and most contented of men. Lang wrote of him, "He underwent many bereavements: child after child he lost, but content he did not lose, nor sweetness of heart, nor belief."[1] In a letter to Coleridge, Charles Lamb alluded to the *Compleat Angler:* "it breathes the very spirit of innocence, purity, and simplicity of heart; . . .it would sweeten a man's temper at any time to read it; it would Christianize every angry, discordant passion; pray make yourself acquainted with it." Barbara Tuchman holds him up as an example of mankind's capacity for happiness, which, she says, "is an individual matter. It springs up here or there, haphazard, random, without origin or explanation."[2] Walton's old age was attributed by his friends to his great contentment. One of the texts which he cites in his book is *The Treatise of Fysshynge wyth an Angle,* printed in 1496. It begins fittingly with this line:

> "Solomon in hys paraboles seith that a glad spirit maket a flowryng age. That is to sey, a feyre age and a longe."

Was Walton's *felicitas* so unlike Osler's *aequinimitas?* In his Valedictory Address at the University of Pennsylvania in 1889, Osler's wish for his hearers is "that you may reap the promised blessing of quietness and of assurance forever, until

> Within this life
> Though lifted o'er its strife,

you may, in the growing winters, glean a little of that wisdom which is pure, peaceable, gentle, full of mercy and good fruits, without partiality and without hypocrisy."[3]

Deans may wish, though they would never say so, that search committees would require more than a little of Osler's and Walton's joyful virtues along with all the other talents and qualities needed by the faculty and their academic administrators: they would not take the place of science nor of common sense, but what antidotes for difficult times!

REFERENCES

1. Lang A. in his introduction to the *Compleat Angler,* Dent & Co., London, 1906.
2. Tuchman B: *Mankind's Better Moments.* The American Scholar, Vol. 49, P. 462, 1980
3. Osler W: "Aequinimitas with Other Addresses," Blakeston Co., Philadelphia 1945, p. 8

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# “Take my free asset test. Now.”

## Al Manke’s free asset test.

**If you hold assets that amount to approximately $250,000, and you have an outside source of income, you should take my test.**

| Assets: | | Ownership Joint or his/hers |
|---|---|---|
| Residence Equity: | $ ______ | ______ |
| Life Insurance: | ______ | ______ |
| Securities: | ______ | ______ |
| Cash: | ______ | ______ |
| Ancillary and Other Property: | ______ | ______ |
| Valuables — i.e. antiques, jewelry, collections, etc.: | ______ | ______ |
| Total Assets: | $ ______ | ______ |

**Colonial Bank Trust Group**

Major Trust Offices in:

**Waterbury • Hartford • New Haven**
**Torrington • Derby • New Milford**

81 West Main Street, Waterbury, CT 06702
Telephone: 482-5561, Ext. 223 (Torrington) or 574-7034 (Waterbury).

Also: Please call me for an appointment.

Name ______

Address ______

City ______ State ______ Zip ______

Phone ______

Alwin H. Manke
*Assistant Vice President — Trust*

Let me complete the equation. Why let the estate liabilities such as fees, marital deductions, Federal and State taxes later reduce the value of your estate. Under the right circumstances, I can cut some pretty fancy figures that will preserve a robust sum for your children.

With a trust under will, careful planning now can significantly reduce taxes paid on your spouse’s estate.

Return this coupon to me. We’ll have a straightforward meeting at your convenience. This analysis is absolutel free, confidential and there is no obliga tion. Together, we’ll keep your estate strong enough to meet the test of time.

# Criteria for Determining That Death Has Occurred: I

JOSEPH M. HEALEY, J.D.

Almost thirteen years have passed since the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death issued its final report "A Definition of Irreversible Coma."[1] Controversy has surrounded the concept of "brain death" and the legal, ethical and medical significance of its acceptance throughout this thirteen year period. A recent case decided by the Supreme Court of the State of Washington[2] considered the roles which law and medicine should play in determining when death has occurred and the extent to which a brain death standard should be applied. This case offers us the opportunity to review the issues surrounding this sensitive area of public policy.

Matthew Bowman, a five-year-old, was admitted to a Washington hospital after suffering massive physical injuries inflicted by a non-family member who had been caring for him. His parents were absent at the time and were located eventually, only after some difficulty. He had been unconscious since his admission, and except for a brief period of increased neurological activity, had gradually weakened. He was being maintained on a ventilator. A physician testified that on the date of the hearing (October 17), he showed no brain activity, his EEG showed no reading and a radionucleide scan revealed a total absence of blood flow. No cornea reflex was present and his pupils were dilated and nonreactive to any stimuli. There were no deep tendon reflexes or other signs of brain stem action, nor responses to deep pain or signs of spontaneous breathing. The physician testified that he and all the physicians of the hospital's intensive care unit agreed that Matthew was no longer alive. They recommended that the ventilator be removed and Matthew's mother concurred. A guardian appointed for Matthew before his parents had been located, requested that the Court prevent the withdrawal of life support equipment and order extraordinary measures to maintain Matthew's life. While the issue was being litigated, despite the continued application of all life support systems, Matthew died on October 23rd. Nonetheless, because of the seriousness of the issues presented, the Supreme Court of the State of Washington proceeded to review the issues in the case and to render its opinion.

The Washington Supreme Court regarded the three critical issues to be:

(1) whether law or medicine should define the standards establishing when death occurs;
(2) if law is to define those standards, should the brain death standard be adopted;
(3) if that standard is adopted, what role should medicine have in defining the criteria for determining whether the standard has been met.

In summary, the Court concluded that it was the law's responsibility to define the standards establishing when death occurs, that the brain death standard should be adopted, and that it is for the medical profession to determine the applicable criteria.

The Court acknowledged that the case at hand did not present the more difficult question of whether life support mechanisms may be terminated while a person is still alive but in that condition known as "persistent vegetative state" in which there is some brain functioning. The Court used as its starting point the fact that the determination that death has occurred is both a legal and a medical question. In this regard the law traditionally has adopted standards of death but has deferred to the medical community for the criteria by which a particular standard would be satisfied. After substantial discussion, the Court expressed its conclusion that brain death would be the legal equivalent of death because under current medical knowledge, the capacity for life was irretrievably lost when the entire brain including the brain stem has ceased functioning. Finally, the Court acknowledged the role of the medical profession:

> "We do not address what are acceptable diagnostic tests and medical procedures for determining when brain death has occurred. It is left to the medical profession to define the acceptable practices, taking into account new knowledge of brain function and new diagnostic procedures."[3]

We will continue our discussion of the subject next month.

REFERENCES

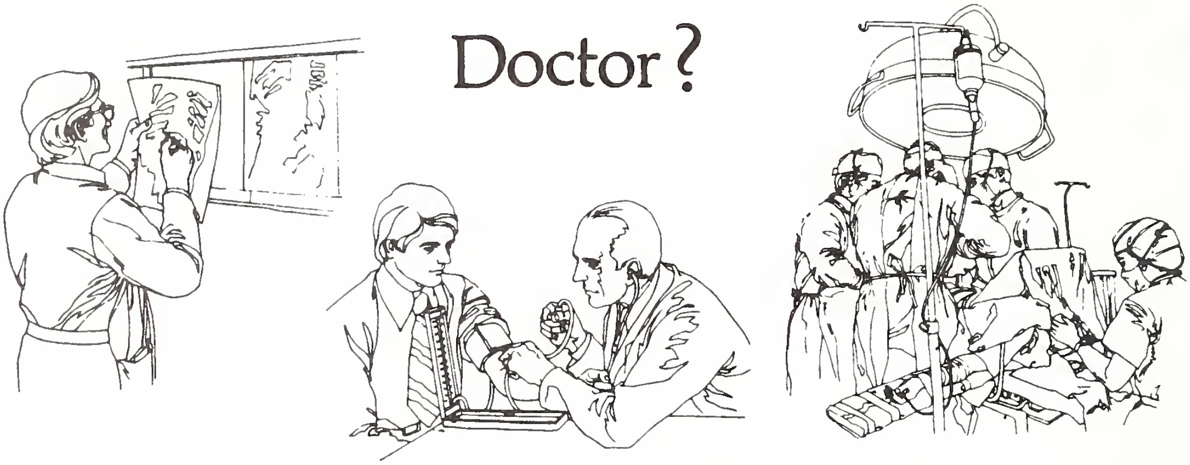
1. Ad Hoc Committee of the Harvard Medical School, "A Definition of Irreversible Coma," *The Journal of the American Medical Association,* Aug. 5, 1968, Vol. 205, pp. 337-340
2. *In re Bowman* (No. 46582) Oct. 2, 1980
3. *ibid.* p. 15

---

JOSEPH M. HEALEY, J.D., Assistant Professor of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, CT.

UNIVERSITY OF MARYLAND

# Have you considered participation, Doctor?



**YOU SHOULD KNOW THAT:**

- The maximum allowances in the Century Contract Comprehensive Schedule of Services have been increased twice in the last 10 months. The increases, in the aggregate, amounted to 35.8%.
- It is the goal of Blue Cross and Blue Shield to update the Century Contract schedule on an annual basis.
- Participating Providers receive prompt payment for covered services directly from Blue Cross and Blue Shield.
- Participation can reduce receivables and eliminate the need to bill patients in many instances.
- Over one million Connecticut citizens are Century Contract members for whom claims totaling $68.4 million were paid in 1979.
- Your patients that are Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Physician, please write or call:

Write:
Blue Cross & Blue Shield of Connecticut
Professional Relations
Box 1930
New Haven, CT 06509
Call:
New Haven area: 777-4481
Toll free: 1-800-922-1742

**Blue Cross**
**Blue Shield**
of Connecticut

® Reg. Mark Blue Cross Assn
®' Reg. Mark Blue Shield Assn.

**Connecticut Medicine**
*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
Florence Keller, *Woodbridge*
James D. Kenney, *New Haven*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*
Norman A. Zlotsky, *Rockville*

# EDITORIALS

## Governor Ella T. Grasso

On February 5, 1981, our Governor, Ella T. Grasso, died, courageous to the end. Even those who disagreed politically with her agree that she was honest, intelligent, and compassionate. She carried her strong will and firmness into the management of her illness and handling of the public media.

On February 7, the *Hartford Courant* carried an interview by its science writer, David H. Rhinelander, with James B. Battaglio, Hartford Hospital's public information spokesman, who gave the background for his manner of notifying the public of her illness. On the same day, the *New York Times* carried a short eulogistic editorial about her. It also decried the "public intrusion into every detail of her final illness," concluding that "What she deserved in the end were prayers and peace."

Battaglio, to his credit, sensing that the feeling of many was expressed by the *Times,* felt it advisable to inform the public through Rhinelander in the *Courant* of the reasons for the unusually frequent and detailed bulletins.

In April, following her first operation for cancer of the ovary, he wrote a brief announcement which she approved and instructed him "to give it to everybody." On November 16, she was readmitted for phlebitis. Immediately there were questions and rumors about her diagnosis and condition, and even about the possibility of her resigning. So five days later, to counteract these, she summoned Battaglio to her room to ask him to "handle all the media statements." She wanted the press releases done "with honesty and dignity."

Only three days later, he was given one of his most difficult assignments—that of reporting that her original cancer had spread to her liver. He discussed then with her how much and in what detail it should be revealed to the public, stating that she did not have to reveal everything. She insisted, however, that he be totally honest, consistent with the letter and spirit of the Freedom of Information statute, her own proud accomplishment. Throughout the 11½ weeks of her hospitalization, he complied with her "command." To those who knew her, this is how Ella Grasso conducted her life—with integrity and openness.

Many believe that there were too frequent and too detailed bulletins. No reasonable person could feel that he/she was not getting enough information, even about the Governor as a public figure. However, a couple of reporters apparently did not. Twenty-four hour security guards who had been posted near her unit to protect her personal privacy had to turn back two reporters—one a woman dressed as a nurse, and a male reporter who disguised himself with a white coat. Too bad that Battaglio did not reveal the names of these two ghouls, certainly a discredit to their profession.

The American public has developed a morbid curiosity that seems insatiable not only about newsworthy personages, but even in their relations with each other. This is aided and abetted by the media, some more than others. The print medium is no longer to be enough; there have to be photographs. This reached new lows in journalism in the recent case of Dr. Michael Halberstam. *Life* magazine, in preparing a story on his life and death, obtained photographs from his family, free, and given in good faith that they would be used with dignity. But that was not enough for *Life;* it was able to obtain photographs from and of the murderer, for which they paid handsomely. Not only David Halberstam, his brother, a nationally known author and reporter, but other editors condemned this contemptible type of journalism.

Physicians especially should consider the case as it affects confidentiality and the privacy of our patients. Though Mrs. Grasso's case was unique, it could affect the attitude of the public as to further disclosure of any patient's illness, especially as to details that they read, day after day. Already too many Americans have an insatiable and morbid curiosity about a person's illness, to such a degree that even thinking people have

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

become unaware that they are invading one's privacy in asking about her/his illness.

So it is becoming more important and necessary that we physicians individually and in our organizations emphasize that we are the guardians of the patient/physician confidentiality. We should continue to fight government and third parties about unreasonable and unnecessary information concerning our patients, especially in this computer age. We physicians, by example and education of hospital personnel, should always protect the privacy and confidentiality of patients. In small hospitals the problem may be gossip; in large hospitals it is impersonality—treating the patient as an object or number.

Though Mr. Battaglio with her attending physicians did an outstanding job in carrying out Mrs. Grasso's instructions, we physicians must be even more alert that her example does not further erode the concept of privacy and confidentiality of our patients. We must never cease our efforts.

We all share in the grief of Ella Grasso's death. And let anyone who casually disparages politicians as dishonest think of her as an example to the contrary.

Fred Fabro, M.D.

## "The Art of Medication"—A Review

New publications constantly cross the desk of an editor. It is difficult to select those worth skimming, let alone reading. Recently, I received one of the "few to be chewed and digested"—*The Art of Medication.*

As explained by the Editor, Dr. Louis Siegel, a practicing physician interested in medical education and communication, its "purpose is to explore the therapeutic transaction and moral, social, and ethical aspects of the physician-patient reaction."

It is a little book, of 32 pages that fits into one's pocket, jammed with thoughtful, well presented ideas by four outstanding and nationally known authors. Remarkably, "it carries no advertising and is produced, independently, under a grant from Hoffman-LaRoche, Inc.," mailed free to over 100,000 physicians.

The first essay is by Peter Goldman, M.D., Maxwell Finland Professor of Pharmacology at Harvard Medical School, entitled *A Pharmacologist Looks at Medication.* Experimental therapeutics and clinical pharmacology have become a fascinating and important field in scientific and clinical medicine. He explains the cross-fertilization between drug development and advances in basic science.

He explores the problems presented by the dilemma of probability of benefit against possibility of harm in use of drugs. Almost all drugs carry a risk, or complication, that must be balanced against the benefits. Our government requires that drugs be safe, and that there be substantial evidence of the effectiveness of the drug for the cited indications of its use. Important are the ethical and therapeutic problems in safety and effectiveness vs. better outcome. He uses several drugs to illustrate.

Albert R. Jonsen, Ph.D., Professor of Bioethics at the University of California, San Francisco, presents an interesting and rare discussion of the *Ethical Meaning of Medication.* Unlike the ancients, little is written by contemporary physicians and ethicists about the ethics in the use of drugs. To demonstrate the point, he tells us of the ethical concern that the ancients such as Aristotle, the Galenic physician in the Middle Ages and Renaissance, and Paracelsus had lest they harm patients in drug treatment. Before modern scientific pharmacology, drugs were crude and dosage inaccurate. To Dr. Jonsen, "Medication is not a simple technical action; it is a complex social interaction with many levels of meaning," including ethics and honesty, antidotes to the magic of drug use. He emphasizes three principles for physicians to follow: Understanding the remedial action of drugs, avoidance of harm, and honesty—ancient principles of medical ethics. And imperative is application of them to the complex and expanding field of clinical therapeutics.

James J. Strain, M.D., Professor of Psychiatry at the Mt. Sinai School of Medicine, NYC, in his *Meaning of Medication* presents an unusual and important component in drug therapy: how the patient's attitude toward medication may be influenced by his/her experience with it in early life. So it is important to delve into a patient's early experience as a child with medication, whether it was pleasant or successful, or the opposite; and who administered it—a loving, trusting mother, or a rejecting, hostile mother who might well have tainted the concept of medication in the child's mind. The attitudes toward illness and medication formed in early life may lie slumbering, only to be reactivated late in life by serious illness. Importantly and not so well appreciated are the physician's own attitude toward the use of medication and treatment of patients which may be influenced by his early experiences.

Last is an article, reprinted in this issue, by Morris B. Abram, a nationally known lawyer of many accomplishments, former President of Brandeis University, and presently Chairman of the President's Commission for the Study of the Ethics of Medicine and Biomedical and Behavioral Research. In *Medicine and Me,* he tells us of his five years' experience with therapy for acute myelogenous leukemia, which in 1973 when his treatment was begun, carried a prognosis of 5% (now about 25%).

His disease was discovered at the age of 55 during a routine annual physical. He was told that the disease was generally fatal. He put himself under the care of a group of physicians from the Mt. Sinai Hospital in NYC. Though the protocol proposed was new and unproven, he "gladly signed every kind of waiver after the most elaborate and informed consent was obtained." Chemotherapy from 1973 to 1978 included several drugs, and late in the course, by special approval from the FDA, an experimental not then approved drug developed in Israel, Methanol Extract Residue (MER), later combined with Neuraminidase-treated leukemic cells. He also received many transfusions, complicated by three bouts of hepatitis.

In September 1976, three years after the initial treatment, he recites an interesting personal and therapeutic dilemma: whether to continue in maintenance treatment until he had been in remission for five years; he had "grown tired of this unpleasant bimonthly chemotherapy." He wrote to his several doctors "a letter which stated the issues as I then saw them, mainly in the form of questions," but not trying to second guess his physicians. He ended the letter by saying that he would leave the "final decision with my doctors." He wished to make an informed decision for himself on the issues as he saw them. His doctors as a group suggested maintenance until five years had passed, advice which he followed. That date has now passed. He is now clinically cured.

He tells us why he survived the disease. First, the aggressive use by his physicians of new drugs, and his "willingness to submit to risks and hazards." Next, agreeing to the chemotherapy combined with immunotherapies to resist infection, with his "good luck" to be spared "the invasion of deadly germs." And finally, "the will to live with the love and support of his wife and family."

It is fitting that this issue, edited by Dr. Siegel and supported by Hoffman-LaRoche, ended with an article devoted not only to the success of a formidable treatment by new and dangerous drugs, but in a disease with such poor prognosis at the time, and written by an unusual, intelligent, knowledgeable attorney interested in medicine who, after informed consent and trusting his physicians, decided "to go for broke."

Fred Fabro, M.D.

## Remission in Acute Myelogenous Leukemia

Acute myelogenous leukemia (AML), one of the most stubborn and incurable kinds of leukemia, is beginning to respond to new chemotherapy treatments.

In a study recently completed this summer, 70 percent of AML patients went into complete remission, that is the patient appears to have no signs or symptoms of the disease, after undergoing a 15-month anti-leukemic therapy program. Researchers predicted that patients would remain in remission 12 to 24 months and evidence now shows that 29 AML patients studied under this research project have remained disease free after two to four years. Several other studies around the country are yielding similar results.

AML, a type of cancer that affects the blood and blood forming organs, strikes 20,000 people each year, primarily adults, but some children as well. Myelogenous leukemia affects the granulocytes or white blood cells that are produced in the bone marrow. Granulocytes normally engulf and digest bacteria and other small particles. The patient may first come down with a cold, and sometimes the lymph nodes, spleen and liver become enlarged. Bone pain, paleness and a tendency to bleed easily are also symptoms as well as the susceptibility to infections.

Until lately, remission rarely exceeded a year. Most patients who initially responded to treatment suffered a relapse or reappearance of signs and symptoms of the disease after being essentially well during remission.

The goal of current studies is to improve the duration of complete remission by attempting to prevent relapse. For instance, researchers at the Sidney Farber Cancer Center in Boston planned a four-month period of intensive treatment to reduce leukemic cells in the hope that remission would last longer and relapse would not occur as quickly.

Under a research grant supported by the National Cancer Institute, 83 patients with AML were seen at various hospitals throughout the country from February 1976 to October 1979. The patients, all under 50 years of age, had not been previously treated for AML. Chemotherapy was given in two phases: a remission-induction phase and an intensive sequential combination phase.

A treatment regimen consisting of vincristine, doxorubicin, prednisolone, and cytarabine—commonly used cancer drugs—was administered. Two weeks after this treatment, a bone marrow and biopsy were performed to detect the presence of leukemic cells. If the patient showed no signs of the disease, then the second treatment was started.

At the end of the first stage, 58 patients out of 83 went into complete remission. Of these, 40 went into remission after one course of therapy; whereas the rest required two courses of therapy.

At the second stage, the program was divided into four drug sequences which took 14 months to administer. Those patients who showed continuous complete remission stopped therapy after sequence IV or approximately 15 months after beginning the research project.

As with all cancer drugs, some side effects were noted. All patients temporarily lost their hair and many experienced vomiting and nausea. Several did not survive the rigorous 15-month program and five elected to withdraw completely.

Currently, 22 patients have completed the program and only four have relapsed. According to Dr. Peter Wiernik, Acting Associate Director for NIH's Baltimore Cancer Research Center, "Seven out of 10 AML patients are responding quickly to treatment today. In the past, most soon relapsed. Now about 25 percent of responders are running at least 4 to 5 years disease-free."

"The important thing," said Dr. Howard Weinstein of the Sidney Farber Cancer Research Institute, a participating cancer center, "is to tell people there is a reasonable chance today for long survival and that patients should be referred to major cancer centers for evaluation and treatment."

The only other therapies that appear to induce remission in AML patients are intensive chemotherapy and total-body irradiation followed by a bone marrow transplantation—rigorous procedures that many cannot undergo.

Many researchers are also perfecting the use of antibiotic therapy to prevent bacterial infection, the most common cause of death in acute leukemia patients.

One study on which this material is based was published in the *New England Journal of Medicine,* August 28, 1980, Vol. 303, No. 9, p. 474.

Susan Gerhold

Associate Editcr
*News & Features from NIH*
Bethesda, Maryland

Reprinted from *News & Features from NIH,* January, 1981.

# SPECIAL NOTICES

## 17th Annual Cardiovascular Symposium
## Saint Francis Hospital and Medical Center
## Hartford, CT
## May 6 and 7, 1981

The 17th Annual Cardiovascular Symposium sponsored by the Section of Cardiology, Saint Francis Hospital and Medical Center, Hartford, Conn. will be held at Hunt Memorial, Hartford Medical Society, 230 Scarborough St., Hartford, Conn., May 6 and 7, 1981. The fee is $60.00.

Contact: Robert M. Jeresaty, M.D., Director, Section of Cardiology, Saint Francis Hospital and Medical Center, 114 Woodland St., Hartford, Conn. 06105.

## Study of Morbidity in Childhood Cancer Survivors and Their Offspring

Due to increased numbers of survivors of childhood cancer, The National Cancer Institute (NCI) has launched a "Study of Morbidity in Childhood Cancer Survivors and Their Offspring," a five-center national research project which will attempt to answer many important questions, medical and psycho-social, about these individuals. In Connecticut, the study will be conducted by the Connecticut Cancer Epidemiology Unit (CCEU) of Yale University School of Medicine, in conjunction with the Connecticut State Department of Health Services, with J. Wister Meigs, M.D., principal investigator, and Jane Teta, MPH, project director.

This study should provide information helpful to both physicians and patients. Results will be particularly relevant to all persons concerned with genetic counseling and evaluation of specific types of treatment. Cooperation from Connecticut's medical community is essential. No patient will be contacted by project staff without prior consent of a physician. During the patient interview, a questionnaire will be presented by individuals trained and highly cognizant of the delicate nature of their assignment. Emphasis will be placed on obtaining the most complete information possible, while maintaining the appropriate degree of sensitivity.

Analysis of the information will be completed by the NCI for the five areas involved in the study. Any physician or other health professional who would like additional information about this project, which will be designated as the "Childhood Health Survey," may contact Ms. Jane Teta at (203) 436-8904.

## Publication of Proceedings

The National Institute on Aging is pleased to announce the publication of the proceedings of the *Second Conference on the Epidemiology of Aging.* This conference, held in Bethesda, Maryland, was a collaborative effort by the National Institute on Aging and the National Heart, Lung, and Blood Institute to set the groundwork for an effective program of research which extends far beyond the study of how aging relates to the incidence and prevalence of diseases occurring in the later years of life.

The major areas of discussion included in the publication are: definitions of aging; biomedical correlates of aging; social, psychological and functional correlates of aging; demographic trends and health care implications; and a summary which makes recommendations for future research.

Single complimentary copies of the *Second Conference on the Epidemiology of Aging* may be obtained by writing to: Expand Associates/NIA/Epid, 8630 Fenton Street, Suite 508, Silver Spring, Maryland 20910.

## Federal Tort Claims: Swine Flu Immunization

The United States District Court for the District of Colorado has dismissed an action filed against the federal government by a woman who was stricken with Guillan-Barre syndrome some seven months after receiving a swine flu vaccination in the government's national influenza immunization program of 1976. The court concluded that Jennie Alvarez, who received the flu shot in October, 1976, when she was 63 years old, and who was stricken with the syndrome in May of 1977, failed to prove that the vaccination caused the syndrome.

The national swine flu immunization program was in effect from October 1, 1976, until it was suspended on December 16 of that year. The Swine Flu Act, applicable to inoculations administered during the program, creates an exclusive cause of action against the federal government under the Federal Tort Claims Act for personal injuries or wrongful deaths sustained as a result of the inoculations. In pretrial proceedings affecting the many cases filed around the country, the federal district court in the District of Columbia entered a final pretrial order stipulating that a plaintiff who develops Guillan-Barre syndrome, a severe neurological disorder, any time after receiving the inoculation need not establish a theory of liability against the government, but the plaintiff must prove causation. In this case, transferred back to Colorado for trial, the causation law of Colorado applied under the Tort Claims Act's provision that liability is to be determined "in accordance with the law of the place where the act or omission occurred."

Mrs. Alvarez, supported by testimony from several physicians, presented three theories of causation.

She supported her first—that the swine flu vaccine sensitized her immune system to the possibility of the Guillan-Barre syndrome—by testifying that about three weeks after getting the shot, she began suffering pains in her joints and feeling "all in." She stated that she was unable to cook Thanksgiving dinner that year and had to change her religious habits when she became too weak to raise herself from a kneeling position.

Mrs. Alvarez's second theory of causation was that the swine flu vaccine caused a serum sickness-like reaction that began two to three weeks after vaccination and continued until the gastroenteritis triggered the syndrome.

In her third theory of causation she claimed that she suffered a chronic or "smoldering" G.B.S. for six months, beginning two to three weeks after being vaccinated, that was exacerbated by an episode of diarrhea.

The government contended that in all likelihood it was the intestinal infection she suffered in May, 1977, and not the vaccination that caused the neurological disorder. The government attributed Mrs. Alvarez's earlier physical problems to her chronic arthritis and argued that if she had been suffering a mild form of G.B.S., doctors would have found an abnormally high level of protein in her spinal fluid when she was finally hospitalized.

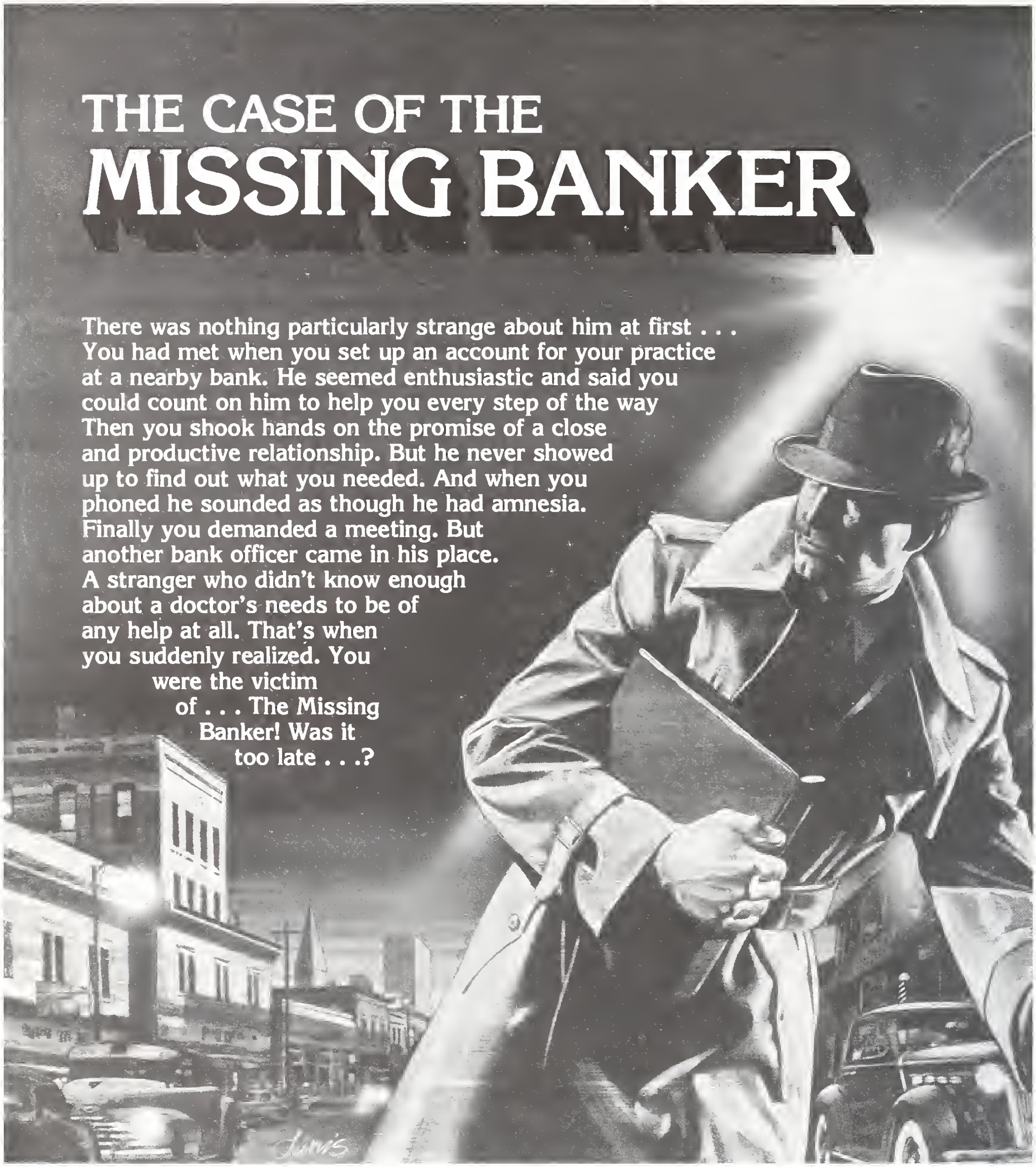
The government also cited a study of the relationship between the swine flu vaccine and Guillan-Barre syndrome conducted by the Federal Center for Disease Control after the immunization program had been halted. The study revealed that 71 per cent of the vaccinated cases became ill within the first four weeks after vaccination. By two-day intervals between inoculation and onset of G.B.S., the largest percentage of the cases (10 per cent) occurred on the 16th and 17th days following vaccination. After the tenth week, there was no significantly greater risk of contracting G.B.S. in the vaccinated population. The study concluded that there was no relation between the swine flu vaccine and the onset of G.B.S. more than ten weeks later.

Ruling against Mrs. Alvarez, Judge Finesilver concluded that she had failed to establish by a preponderance of the evidence that her syndrome was caused by the immunization. He noted that the "smoldering" disease theory was "not generally accepted in the present state of medical and scientific knowledge" and pointed out that it was speculative to contend that her immune system was "sensitized." Judge Finesilver observed that the exact cause of the disease still has not been determined and that the body of knowledge about it is constantly evolving. He thought that the ten-week limit could be modified "at some future time in the light of reason and experience."

Judge Finesilver noted in closing how unfortunate it was that Mrs. Alvarez suffered from this "enigmatic disorder." "She has demonstrated throughout her lifetime attributes of hard work, frugality and family concern," but the fact remains, he emphasized, "that only those illnesses which are proven to be causally related to the vaccine are compensable."

(*Alvarez v. United States*, July 31, 1980, C.A. No. 78-F-1128.)

—*American Bar Association Journal*, November, 1980



THE CASE OF THE
MISSING BANKER

There was nothing particularly strange about him at first . . . You had met when you set up an account for your practice at a nearby bank. He seemed enthusiastic and said you could count on him to help you every step of the way Then you shook hands on the promise of a close and productive relationship. But he never showed up to find out what you needed. And when you phoned he sounded as though he had amnesia. Finally you demanded a meeting. But another bank officer came in his place. A stranger who didn't know enough about a doctor's needs to be of any help at all. That's when you suddenly realized. You were the victim of . . . The Missing Banker! Was it too late . . .?

**It's never too late to put a First Banker to work for you.** First Bankers understand your needs and will help you equip your office . . . design an appropriate retirement plan . . . and invest your short term funds for maximum return. Count on us to help you make the moves that make your assets grow.

First Bank
Member FDIC

WHEN WE GET INVOLVED, YOU GET RESULTS.

**New Haven Region**
**773-7574**
New Haven
Woodbridge
Bethany

**Western Region**
**773-7673**
West Haven
Derby
Milford
Orange

**Eastern Region**
**773-7174**
Branford
East Haven
Guilford
Westbrook

**New London Region**
**447-3128**
East Lyme
New London
Waterford

**Northern Region**
**773-7288**
Hamden
North Haven
Wallingford

**Hartford Region**
**278-0730**
Hartford
West Hartford
East Hartford

# Where AMA Stands on the Issues

While some critics are quick to criticize AMA for being "negative" on health issues, the record shows that in recent years the Association has *supported,* and in several instances developed and submitted for introduction, many pieces of federal health-related legislation.

**On health manpower. . .**

*Medical manpower training*—Supported legislation continuing present programs of federal financial support to schools of medicine and medical students, including construction grants to schools.

*Income tax exemption for scholarships and student loans*—Developed a bill encouraging physicians to serve in medical shortage areas which would exempt from federal income tax scholarships and student loans which require service following graduation as a condition of receiving financial assistance.

*Preventive medicine residency*—Developed and supported legislation providing for funding under the Health Manpower Act for residency training programs in preventive medicine.

*Foreign medical graduates*—To avoid abrupt cut-off of FMGs under the Health Professions Educational Assistance Act, supported an amendment permitting continued limited immigration of FMGs until appropriate provisions can be developed.

*Nurse training*—Supported legislation continuing federal support for schools of nursing and nursing students.

*Allied health professions training*—Supported legislation continuing federal support of schools and training facilities for the allied health professions and students of allied health.

*Physician extenders*—Supported amendments to legislation permitting payment of physicians by Medicare for services of physician extenders in order to foster development of health services in shortage areas.

**On Medicare, Medicaid, Social Security and related programs . . .**

*Medicare-Medicaid anti-fraud and abuse amendments*—Supported increased efforts to halt fraud and abuse in government health programs.

*Medicare-Medicaid*—Developed and supported a series of bills which would amend these programs to: (1) allow direct billing of Medicaid patients; (2) delete the Medicare requirement that hospitalization of a patient must occur prior to admission to skilled nursing facilities for reimbursement purposes; (3) establish a more equitable assignment of Medicare fee profile to physicians setting up new practices; (4) limit required utilization review under Medicare only to Medicare beneficiaries and allow Medicare reimbursement for such review; and (5) repeal Section 227 of P.L. 92-603, the provision requiring special Medicare reimbursement for services of physicians in teaching hospitals.

*Physician reimbursement for Social Security disability exams*—Developed and supported legislation amending the Social Security Act to provide for reimbursements to private physicians for services in supplying medical evidence needed to evaluate disability claims under Title II.

*Determination of prevailing charges under Medicare*—Developed legislation providing for determination of prevailing charge levels for physicians' services without reference to economic index limitations and providing for a more equitable computation of prevailing charge levels.

*Limitation on civil liability of health care providers*—Developed and supported legislation preventing malpractice claimants from receiving as part of recovered damages costs of health care services for which payment may be made under Social Security.

**On topics of current professional concern . . .**

*Hospital cost containment*—Objected to the President's proposal to impose a mandatory 9% cap on hospital revenues and urged Congress to allow a private sector program, the Voluntary Effort, aimed at cost control, to continue without federal interference.

*PSRO amendments*—Developed amendments correcting some of the undesirable effects of PSRO. *Laetrile*—Supported efforts of the Food and Drug Administration to prevent distribution of laetrile in interstate commerce in the absence of a showing of safety and effectiveness.

*Health planning*—Developed and supported legislation to change the National Health Planning and Development Act to insure that required planning decisions are made at the local level with adequate provider input, and to eliminate onerous penalties against states failing to pass certificate-of-need laws.

*Confidentiality*—Supported increased protection of confidentiality of physician and patient records generated by federal programs.

**On government operations . . .**

*Department of Health*—Developed legislation establishing a cabinet-level Department of Health headed by a physician.

*Amendments to the Administrative Procedure Act*—Developed a bill amending this act to permit a better opportunity for the public to respond to proposed regulations and to provide improved mechanisms for providing affected parties input into the regulatory process.

*Sunset law*—Supported legislation requiring a periodic review and rejustification of each federal agency or program to determine whether it should be phased out, changed or continued in its present form.

*Appropriations*—Supported appropriate funding for various programs and agencies.

*—Reprinted from American Medical News*

# In Memoriam

**AMANTI, JOSEPH A.,** New York University, 1949. Dr. Amanti was a surgeon in the New London area since 1949. Dr. Amanti served in a Korean MASH unit during World War II and was discharged as a captain. He was chief of surgery and past president of the medical staff at Johnson Memorial Hospital in Stafford Springs and a member of the Tolland County Medical Society and the Connecticut State Medical Society. Dr. Amanti died January 6, 1981, at the age of 56.

**CORRADINO, CHARLES,** Tufts University, 1929. He was a cardiologist in the New Haven area since 1929. He was a clinical instructor at Yale Medical School and became assistant clinical professor in medicine there in 1972. From 1950 to 1975, he was attending cardiologist in the cardiac clinic at Yale-New Haven Medical Center and an attending medical staff member at the hospital, and was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Corradino died January 11, 1981 at the age of 76.

**GERMAN, WILLIAM J.,** Harvard University, 1926. Dr. German specialized in neurological surgery in the New Haven area since 1932. He came to Yale as an assistant resident in surgery in 1928, completing his neurosurgical and general surgical training in 1931. He was promoted to professor in 1948 and received an honorary degree at Yale the same year. Except for military service, Dr. German served as chief of neurosurgery at New Haven Hospital and Yale Medical School from 1933 to 1968. He served briefly in World War I and in the Navy Medical Corps in 1944-46, retiring with a captain's rank in 1959. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. German died January 9, 1981, at the age of 80.

**MAISLEN, SAMUEL,** University of Vermont, 1914. Dr. Maislen was a general practitioner in the Hartford area since 1915, retiring in 1977. He served as 1st Lt. in World War I and was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Maislen died January 5, 1981, at the age of 89.

**MOHER, JAMES J.,** Yale University, 1937. Dr. Moher was an internist in the Hartford area since 1947. He interned at the St. Francis Hospital in Hartford and was a member of its staff until his death. He served in the U.S. Air Corp from 1943-1947. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Moher died January 11, 1981, at the age of 68.

**PETRELLI, JOSEPH V.,** Yale Medical School, 1925. Dr. Petrelli was a surgeon in the New Haven area since 1925, until his retirement in 1979. Dr. Petrelli was a member of the medical staff at St. Raphael's Hospital and was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Petrelli died January 8, 1981, at the age of 80.

**ROTH, OSCAR,** University of Vienna, 1937. He served in World War II as a Captain in the U.S. Army, and was named an assistant physician at St. Raphael's after the war. He eventually also became a member of the teaching faculty at Yale-New Haven Hospital. He was director of the coronary care unit at the Hospital of St. Raphael and was acknowledged as one of the nation's top experts on cardiology and cardiovascular disease. For many years, Dr. Roth offered postgraduate courses in coronary care to further the educations of fellow physicians. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Roth died January 16, 1981, at the age of 70.

**SMITH, LEO M.,** Tufts Medical School, 1937. Dr. Smith was an internist in the Fairfield area since 1937. Dr. Smith was Director of Medical Education at Stamford Hospital and was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Smith died December 17, 1980, at the age of 68.

**SWARTS, WILLIAM B.,** University of Pennsylvania, 1934. Dr. Swarts was a dermatologist in the Fairfield area since 1938, and served in the U.S. Army from 1941-1944. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Swarts died December 28, 1980, at the age of 72.

**VAN KLEECK, EUEN,** Columbia College, 1910. He served in the U.S. Army in World War I and later moved to Hartford to serve as Assistant Medical Director of the Travelers Insurance Company. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Van Kleeck died January 10, 1981, at the age of 91.

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## CALL
## ANNUAL MEETING OF THE HOUSE OF DELEGATES

**The 1981 Annual Meeting of the House of Delegates will be held at the Ramada Inn, North Haven, commencing at 12:30 P.M. on Wednesday, April 29.**

W. Raymond James, M.D., President
Joseph S. Sadowski, M.D., Speaker of the House
Louis C. Backhus, M.D., Secretary

## INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society provides:

*Resolutions may be introduced by any Active or Life Member or student members or postgraduate physician members of the Society, in compliance with the following provisions:*

a. *All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*

b. *Component county associations or the student members or postgraduate physician members, whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc. be considered regular business if they are received later than fifteen days prior to the date of the meeting.*

c. *Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of The Society at any time and shall be considered as regular business.*

d. *Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provision of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

---

***Mark Your Calendar***

## Connecticut State Medical Society
## 189th Annual Meeting

### Annual Meeting of the House of Delegates
Wednesday, April 29, 1981 — 12:30 P.M.
Ramada Inn, North Haven

### General Scientific Program
Wednesday, May 27, 1981
Sheraton Park Plaza Hotel, New Haven

***Plan Now to Save the Dates***

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### ANESTHESIOLOGY

Board certified or eligible Anesthesiologist for 170 bed hospital in Putnam, CT. Attractive rural community, good schools, easy drive to major cities. Join fee for service corporation offering good income plus multiple benefits. Include CV with first letter. Send resume to: Dr. Arturo Diaz, P.O. Box 509, Putnam, CT 06260

Emergency Physician—full time position available in modern 226-bed community hospital in eastern CT, 33,000 visits yearly; 42-hr. work week; salary negotiable. Send CV to G.I. Springer, M.D., Chief of Emergency Services, W.W. Backus Hospital, 326 Washington St., Norwich, CT 06360.

### FAMILY PRACTICE

Large adult medical practice now available for immediate sale in New Haven county. Yale-affiliated hospital. Includes office and x-ray equipment. Send CV to CSMS/GP-ERH.

For sale—Medical Family Practice. Five exam. rooms fully equipped with lab. 2,000 sq. ft. of space. Central CT community location. Contact Mrs. Michael Gualtieri, 55 Forest Ridge Rd., Waterbury, CT 06708.

Opportunity for a young Family Practitioner to take over an active practice on a cost sharing basis. Present Family Practitioner wishes to retire gradually over the next two years. Call 1-203-443-3778.

Solo practice available. Retiring from practice. No charge and equipment free. City located between New Haven and Hartford. Contact CSMS or call 235-0091 after 6:00 P.M.

### INTERNAL MEDICINE

Internists with specialty in cardiovascular diseases seeking Board certified or eligible associate, with eye to partnership. Sub-specialty welcomed but not essential. Located in medium size shoreline community. Send resume and salary requirements to CSMS/IM-RLVDB.

### OBSTETRICS AND GYNECOLOGY

Obstetrician/gynecologist needed for growing multispecialty medical group of an established qualified HMO, affiliated with a medical center and serving 26,000 members. Require strongly qualified physician to work with OB/GYN group, midwives, and primary care physicians to provide comprehensive care. Excellent fringe benefits and salary with this permanent position to begin July 1, 1981 - EOE-M/F. Send resume to: Dr. Ronald T. Rozett, Medical Director, Community Health Care Center Plan, 150 Sargent Drive, New Haven, CT 06511.

### ORTHOPEDIC SURGERY

Two Board- certified Orthopedic Surgeons presently engaged in general orthopedics in Waterbury, CT. Interested in adding new member to organization. Write CSMS/Ortho/MOG.

### OTOLARYNGOLOGIST

Excellent opportunity for Board Eligible or Board certified otolaryngologist in a one man otolaryngology practice. First year salary guaranteed, including malpractice insurance. Attractive Connecticut College community with modern hospitals. Modern office with latest equipment. Qualified staff, including x-ray technician, certified audiologist and ENG technician. Write CSMS OTOL/HS.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### ANESTHESIA

Feb. '81. MD: Medical College of PA. Int: Stamford Hospital, Ct: Res: Hosp. of U. of PA. Nat'l bds., AB-Eligible. Interested in group or institutional practice. Write Charles R. Swaine, M.D., Laurel Beach Hotel, Seaview Ave., Milford, CT.

### DERMATOLOGY

Dermatology: Available immediately. Age 38. AB-Eligible. Nat'l bds. cert. MD: State University of New York at Buffalo. Group practice.; Write CSMS/DERM/CLS.

### FAMILY PRACTICE

Aug. '81. Age 30. FLEX. AB-elig. MD: Univ. of Bologna, Italy. Int. and res.: Brookhaven Mem. Hosp., NY. Will consider all types of practice in med.or sm. community in CT. Joseph P. Giancaspro, M.D., 19 Bellport La., Bellport, L.I., NY 11713.

July '81. Age 27. Nat'l bds., cert. AB-elig. MD: University of Puerto Rico. Int. and Res.: J.F. Kennedy Hospital, New Jersey. Solo, group or associate practice. William H. Rossy, M.D., 28A Woodedge Ave., Apt. #6, Edison, NJ 08817.

Spring '81. Age 31. Nat'l bds., cert. Part-time. MD: SUNY-Buffalo. Int.: St. Vincent's Hosp., NY. Res: OB/GYN - Einstein; FP-Montefiore, Fellowship: FP-SUNY-Stony Brook. Desire placement with husband, Grady D. Gafford, M.D., (Ophth.). Will consider all types of practice except industrial. Christine L. Tolins, M.D., 2 Glenridge Ave., Stony Brook, NY 11790.

Aug. '81. Age 30. FLEX. ECFMG. MD: University of Bologna, Italy. Int. and Res.: Community Hospital at Glen Cove. Group or associate practice. Louis Verardo, M.D., 21 Walnut Road, Apt. 1-2A, Glen Cove, NY.

### INTERNAL MEDICINE

July '81. Age 30. AB-elig. MD and Int.: India Res.: Flushing Hosp. and Med. Ctr. Solo, grp. or assoc. practice in CT. Shashidhar B. Acharya, M.D., 144-40 Roosevelt Ave., #5B, Flushing, NY 11354.

Cardiology: Age 33. Applied for Conn. license. AB-cert. Presently in practice. MD: India. Int.: Lawrence Hosp., NY. Res.: Kingsbrook Jewish Med. Ctr., NY. Fellowship: Maimonides Med.Ctr., NY. Expert in non-invasive card. pacemaker insertion, Swans-Ganz Catheterization. Will consider all types of practice except industrial. Contact CSMS/IM-Card.-HKA.

July 1, 1981. Nat'l bds. and AB-cert. MD: Tufts University. Int. and res.: Greenwich Hospital. Age 29. Group or associate practice, preference greater Hartford area. Marvin Cetel. M.D., 64-4 Hope Street, Stamford, CT 06906.

Nephrology: July '81. Age 29. Nat'l bds., cert. MD: Res. and fellowship: Univ. of Texas. Int. and fellowship: Georgetown Div., D.C. Gen. Hosp. Grp., institutional or academic practice in large or med. community. Husband ophthalmologist. Positions only if they are in same geographical area. Dr. Kimble. Caroline E. Cooley, M.D., 410 A 15th St., S.E., Washington, D.C. 20003.

July '81. Age 33. Nat'l bds., elig. MD: India. Int. and res.: Catholic Med. Ctr., NY. Will consider all types of practice in CT. Naran P. Dodia, M.D., 86-16-60 Ave., Apt. 3D, Elmhurst, NY 11373.

July '81. Age 29. Nat'l bds., elig. MD: Case Western. Int. and res.: Cleveland Metro Gen. Hosp. Grp. or assoc. practice in med.

community. William T. Fayen, M.D., 3395 Scranton Rd., Cleveland, Ohio 44109.

Hematology and Oncology: July '81. Age 38. AB-elig. MD: Univ. of Bologna. Int: Jersey Shore Med. Ctr. Res.: Brooklyn Methodist Hosp. Fellowships: Cabrini Med. Ctr., Kings County and Downstate Med. Ctr. Solo, grp. assoc. or partnership in large or med. community. Frank Gentile, M.D., 654 Dahill Rd., Brooklyn, NY 11218.

Cardiology: Available April '81. Age 31. MD: Univ. of PA. Int: Bellevue Hospital. Res: Presbyterian Hospital, U. of PA Med. Ctr. Fellowship: Columbia College of P & S. Passed NB. Certified AB. Interested in group, associate or institutional practice. Write Lawrence Gessman, M.D., 21 Sabine Ave., Narberth, PA 19072.

Clinical Cardiology: Availability flexible. Age 57. Ct. License. MD: Natinal U., Athens, Greece. Res.: Hippokration G. Hospital, Greece. Fellowship: Med. & Cl. Pharmacol, Michigan St. U. Presently Hypertension Union, Louisville, U. Seeking, group or associate practice. Nicholas D. Katevatis, M.D., 430 W. Muhammad Ali Blvd., Louisville, KY 40202.

Cardiology: July '81. Age 30. Nat'l bds., cert. MD: Univ. of Rochester. Int. and res.: Univ. of Chicage. Fellowship: Univ. of PA. Grp., assoc., or institutional practice desired in Southern part of CT. Philip R. Oranburg, M.D., 2208 Delancey Pl., Philadelphia, PA 19103.

Cardiology: July '81. Age 29. Nat'l bds., cert. MD: NY Univ. Int. and res.: State Univ. of NY at Buffalo. Fellowship: Albany Med. Coll. Grp. or assoc. practice. Clinical practice incorporating M-mode and 2D Echocardiography and bedside invasive procedures, (e.g. Swan-Ganz Catheterization and temporary pacemaker insertion.) Contact CSMS/IM-Card.-JAL.

Gastroenterology: July '81. Age 30. Nat'l bds., cert.-IM; elig. Gast. MD: Georgetown. Int. and res.: Thomas Jefferson Univ. Hosp., Phil. Fellowship: Lankenau Hosp: Phil. Practice primarily GI but willing to do Gen. IM. Skilled in gastroscopy, colonoscopy and polypectomy as well as ERCP and laparoscopy. Solo grp. or assoc. practice desired in CT. David J. McGroarty, M.D., 1001 City Line Ave., Apt. WA01, Philadelphia, PA 19151.

July '81. Age 30. AB-elig. Cardiology. MD: Medical College U. Baroda, India. Int. and res.: Kingsbrook Jewish Medical Center, Brooklyn. Fellowship: Norwalk Hospital. Group, associate or institutional practice in noninvasive and invasive cardiology. Write CSMS/Card/AMM.

Sept. '81. Age 28. Conn. license. Nat'l bds., elig. MD: Jefferson Med. Coll., PA. Int: Norwalk Hosp., CT. Res.: Baystate Med. Ctr., MA. Fellowship: U Conn. and National Health Services Corps, USPHS. Solo, grp. or assoc. practice in med. or sm. community. Main concern is to have good hosp. facilities nearby. Bernard F. Oddi, M.D., 171 Hilltop Rd., Plainville, CT 06062.

July '81. Flexible. Age 28. Conn. license. Nat'l bds., elig. MD: Int. and res.: U. Conn. Presently in practice in ER. Solo, grp. or assoc. practice in Eastern CT or Hartford area, but will consider other locations. Contact CSMS/IM-CCP.

July '81. Age 31. Conn. license. FLEX. AB-elig. MD: India. Int. and res.: Griffin Hosp. Derby, CT. Grp., assoc. or institutional practice desired in CT. Prakash N. Puranik, M.D., 42 Peiper Dr., Wallingford, CT. 06492.

Gastroenterology: July '81. Age 33. FLEX. AB-elig. MD: Univ. of Bologna, Italy. Int., res. and fellowship: Long Island Coll. Hosp., NY. Grp. or assoc. practice in med. community. Skilled in all endoscopic procedures including ERCP, PTC, polypectomy, hyperalimentation; interested in therapeutic endoscopy. George J. Rezk, M.D., 7713 Fort Hamilton Parkway, Brooklyn, NY 11228.

July 1, '81. MD: Baroda Medical College, India. Int.: Long Island Jewish Hillside Medical Ctr. Res: Methodist Hospital, Brooklyn. Passed FLEX. AB-Eligible. Interested in solo, group or associate practice. Write CSMS/IM/LJR.

Rheumatology: Aug. '81. Age 30. Nat'l bds., cert.-IM. MD: U. Conn. Int., res. and fellowship: Cleveland Metro Gen. Hosp. Grp., assoc. or institutional practice in CT desired. Would prefer doing mostly Rheu., but willing to do some IM. Robert E. Rzewnicki, M.D., 9807 Clifton Rd., Cleveland, Ohio 44102.

July '81. Age 30. Nat'l bds., elig. Presently in practice. MD: Downstate. Int.: NJ Coll. of Med. and Dentistry. Res.: St. Joseph's Hosp. and Med. Ctr., NJ. Any size grp., from a sm. grp. of IM to large multispecialty grp. considered. David C. Sobel, M.D., 225 Clark Dr., Orwigsburg, PA 17961.

Endocrinology and Metabolism: July '81. Age 30. Conn. license. FLEX. AB-cert-IM; elig.-End. and Metab. MD: Univ. of Western Australia. Int: Hunt Hosp., Lower Hutt. Res.: Auckland Hosp., both in New Zealand. Fellowship: U. Conn. Health Ctr., and Bristol Hosp., CT. Grp. or assoc. practice desired, but will consider other alternatives. Contact CSMS/IM-End.-Metab.-TPS.

July '81. Age 37. Conn. license. Am. Bd.-elig. MD: Univ of Buenos Aires. Int.: Ramos Mejia Hosp., Buenos Aires and Griffin Hosp., CT. Res.: Griffin Hosp. Grp., assoc. or institutional practice in med. community. Maria S.P. Wozniak, M.D., 166 Scott Rd., Prospect, CT 06712.

## NEUROSURGERY

July '81. Age 36. Nat'l bds,. elig. MD: Int. and res.: India. Fellowship: Univ. Med. Ctr. MS. Group or institutional practice in large or medium community desired in CT. P. Shripathi Holla, M.D., 5840 Ridgewood Road, Apt. S-5, Jackson, MS 39211. Wife Ped. looking for same area.

## OBSTETRICS AND GYNECOLOGY

July '81. Age 32. Nat'l bds., Amer. Bd. eligible. MD: Temple University. Int. and res.: Allentown General Hospital, Pa. Group or associate practice in medium size community. Claire L. Bernadin, M.D., Allentown General Hospital, 17th & Chew Sts., Allentown, PA 18102.

July '81. Age 31. FLEX. AB-elig. 7/81. MD and int.: India. Int.: St. Clare's Hosp., Flushing Hosp., both NY. Res.: Mercy Hosp., PA. Solo or grp. practice in large or med. community. Kailash R. Makhija, M.D., 5628 5th Ave., B-10, Pittsburgh, PA 15219.

## OPHTHALMOLOGY

Spring '81. Age 31. Nat'l bds., elig. Presently in practice. MD: Univ. of Alabama. Int. and res.: St. Vincent's Hosp., NY. Wife Dr. Tolins, Family Practice, also looking for placement. Solo, grp. or assoc. practice in CT. desired. Grady D. Gafford, M.D., 2 Glenridge Ave., Stony Brook, NY 11790.

July '81. Age 30. MD: George Washington U. Int.: North Shore U. Hospital. Res.: George Washington U. Nat'l bds., eligible-AB. Solo, group or associate practice desired. Write: Mark S. Gorovoy, M.D., 1661 Kenwood Ave., Alexandria, VA 22302.

July '81. Age 29. FLEX. AB-elig. Presently in practice. MD and res.: Univ. of Texas. Int.: Georgetown-D.C. Gen. Hosp. Solo, grp. or assoc. practice in CT desired. Wife, nephrologist, Dr. Cooley, same geographical area. James R. Kimble, M.D., 410A 15th St., S.E., Washington, D.C. 20003.

## UROLOGY

Available immediately. MD: U. of Naples, Italy. Int.: Fort Sanders Presb. Hosp. Knoxville, Tenn. Res.: ewos Gale Hosp. Roanoke, VA. Laval Med. Sch. at Sacramento: Columbus Hospital, Newark, N.J.: New York Medical Coll.: New Jersey Coll. of Med. Passed NB. cert. AB. Solo or small group practice. Write: Allessandro Colalillp, M.D., P.O Box 68, Freeport, IL 61032.

**PHYSICIANS NEEDED**

The Navy is seeking physicians who want an alternative to the administrative burden and expense of private practice. Our modern medical facilities provide the latest techniques and equipment. Opportunities exist to do research on projects both exciting and clinically meaningful, including aerospace and submarine medicine, underwater physiology and environmental and preventive medicine. Professional allowances in addition to competitive salaries. Non-taxable quarters and subsistence allowances. 30 days' paid vacation earned each year. Insurance, medical, dental package.
For more information, contact:

Lt. Paul Quinn, MSC, USN
Officer Programs Office
135 Burnside Avenue East Hartford, CT 06108
(203) 528-9988 collect

**Psoriasis Treatment**

**PHOTOTHERAPY CENTER**

Photochemotherapy (PUVA) for psoriasis is available for appropriate patients in an ambulatory setting. We have openings for patients with extensive psoriasis who would benefit from therapy with the combination of long wave ultraviolet (UV-A) and Psoralens (PUVA).

This is a new and investigational mode of therapy under an IND with the FDA.

For information contact:

**Adult & Adolescent Dermatology PC**
**Ronald C. Savin, M.D.**
**123 York Street**
**New Haven, Conn. 06511 865-6143**

## CLASSIFIED ADVERTISING

MEDICAL DIRECTOR: We are a leading preventive and occupational health corp. seeking a Board Certified Internist to join our staff as Medical Director for our diagnostic clinic in Stamford, Conn. This unique position affords the opportunity to utilize both clinical and administrative skills with an emphasis on preventive medicine, performing comprehensive exams and consultations on corporate executives.

To be considered for this position offering excellent salary and full company-paid benefits package (incl. malpractice), convenient location and hours (Mon-Fri/8:30AM-4:30PM), please send CV or call in confidence: Ms. Cathy Liengme, Personnel Director, Executive Health Examiners, 777 Third Avenue, NYC, NY 10017, (212) 486-8991.

---

FOR SALE: Medical or Dental or Paramedical Professional Suite, 714 Chase Parkway Professional Building, Waterbury, Connecticut; 1224 or 1400 square feet; close proximity Waterbury and St. Mary's Hospitals, major highways. Excellent terms and financing. Call 756-4410.

---

Locum Tenens — COMPHEALTH. Our medical group can place a well-qualified physician in your practice during your absence. For more information call or write: Comprehensive Health Systems, Inc. 175 West Second South, Salt Lake City, UT 84101 (801) 532-1200.

---

FOR SALE or Rent—1600 square feet of prime medical office space in Waterbury. Available immediately. Unusual opportunity at very reasonable cost. Can subdivide. Financing available. Call W. Scott Peterson, M.D., 574-2020.

**Summer Cruise/Conferences on Legal-Medical Issues**

APPROVED FOR
23 CME CREDITS
CATEGORY I

By the American College of Legal Medicine
Seminars Directed by Irwin N. Perr, M.D., J.D.
Professor, Rutgers Medical School

Caribbean Conference — July 29 — August 8, 1981 aboard TSS Fairwind.* Visit St. Maarten, Antigua, Barbados, Martinique and St. Thomas.

Mediterranean Conference — August 22 — September 5, 1981 aboard Mts. Danae.** Visit major cities in Italy, Greece, Egypt, Israel, Turkey, Yugoslavia.

- All meals on cruise and aloft.
- Seminars conducted at sea.
- Alitalia scheduled flights to Italy.
- Excellent Fly/Cruise group rates.
- Hotel Danieli — Venice, Italy
- All transfers

The number of participants in each Conference is limited. Early registration is advised.

For color brochure and additional information contact:

International Conferences
189 Lodge Avenue
Huntington Station, N.Y. 11746
Phone (516) 549-0869

Both conferences are designed to conform with the 1976 Tax Reform Act.

*Liberian Registry
**Greek Registry

# Diagnostic Evaluation of Patients with DES Exposure In-Utero

### A Prospective Study

STEPHANIE SPANGLER, M.D., MARY CATHERINE BIBRO, M.D. AND
PETER E. SCHWARTZ, M.D.

**ABSTRACT—A series of patients with a history of diethylstilbestrol (DES) exposure in utero have been evaluated at Yale-New Haven Hospital by routine pelvic examinations, cytologic screening, iodine staining and colposcopic examination. A subgroup also underwent biopsies of the cervix, vaginal fornix and anterior vaginal wall. It would appear that colposcopy is the most accurate procedure to direct biopsies for evaluation of abnormal Papanicolaou smears and confirm the extent of adenosis in DES exposed women. However, patients with normal pelvic examinations by inspection, palpation, cytologic and colposcopic examinations do not require colposcopic evaluation in follow-up examinations.**

## Introduction

The discovery, in 1971, of the association of in utero diethylstilbestrol (DES) exposure with the later development of clear cell adenocarcinoma of the vagina and cervix in female offspring[1] has resulted in the development of numerous DES screening programs across the country. Initial concern centered on the detection of clear cell adenocarcinoma of the vagina and cervix and its presumed precursor lesion adenosis. However, while the incidence of vaginal adenosis in various series of DES exposed females has been found to range as high as 90%,[2-6] the risk of clear cell carcinoma of the lower reproductive tract has been reported to be quite small, i.e., 0.14-1.4/1000 DES exposed individuals.[7] In addition, since the initiation of comprehensive DES screening there has been only one report of vaginal adenosis progressing to clear cell adenocarcinoma while under observation.[8]

In 1974 Stafl and Mattingly proposed that the development of malignant and premalignant squamous epithelial changes in a teratogenetically widened transformation zone constitutes the major risk in DES-exposed females.[9] In subsequent investigations both Stafl and Mattingly and Noller, et al. demonstrated a prevalence rate of CIS in DES-exposed females which was nearly five times that of the unexposed population.[10, 11] In light of these findings routine screening of the DES-exposed population has taken on increased significance. Various diagnostic modalities have been employed;[12-16] however, the optimal method for the early detection of both clear cell adenocarcinoma and squamous epithelial changes has not been outlined. It is the purpose of our current study to report the results of the initial evaluations of 172 patients with documented DES exposure, screened by a single physician (PES) at Yale-New Haven Hospital, and to discuss the role of cytology, colposcopy and iodine staining in the evaluation of the lower genital tract.

## Materials and Methods

Between October, 1975, and May, 1978, 192 patients were referred to Yale-New Haven Hospital for colposcopic evaluation secondary to a positive DES exposure history or to the presence on pelvic exam of cervical and vaginal changes associated with in utero exposure to DES. Although all patients underwent similar evaluation, only the 172 patients with a history of in utero DES exposure were included in the study.

---

STEPHANIE SPANGLER, M.D., Former Resident in Obstetrics and Gynecology, Yale-New Haven Hospital; Currently in Private Practice, New Haven, CT. MARY CATHERINE BIBRO, M.D., Former Resident in Pathology, Yale-New Haven Hospital; Currently Staff Pathologist, National Naval Medical Center, Bethesda, MD. PETER E. SCHWARTZ, M.D., Associate Professor, Director, Gynecologic Oncology, Yale University School of Medicine.

Evaluation included detailed questioning of the patients and their mothers, if available, with regard to indications for intragestational DES therapy, time of initiation and duration of therapy, maternal obstetrical histories, patient obstetrical and sexual histories, and maternal medical histories subsequent to DES exposure.

Pelvic examination included careful inspection of the cervix and vagina for gross anatomic abnormalities, collection of cytologic specimens by endocervical swab and exocervical scraping, Schiller's staining of the cervix and vagina, and colposcopic examination of the cervix and vagina. Biopsies of the cervix, vaginal fornix, and vagina were performed in 103 consecutive patients. In patients with normal colposcopic findings, random biopsies of the anterior cervical lip, anterior vaginal fornix, and anterior vaginal mucosa were obtained in keeping with Ng and Reagen's finding that 81% of all vaginal adenosis in DES-exposed females occurs on the anterior vaginal wall.[4] In the remainder of patients, colposcopically abnormal areas were sampled.

### Results: Historical Data

The age distribution of patients at the time of presentation for evaluation is shown in Figure 1. Patients ranged from eight to thirty years of age at presentation, the mean age being twenty-three years. Twenty-seven patients had completed one or more pregnancies prior to evaluation. Twelve of these patients had delivered live infants; the remainder had undergone therapeutic or spontaneous abortions.

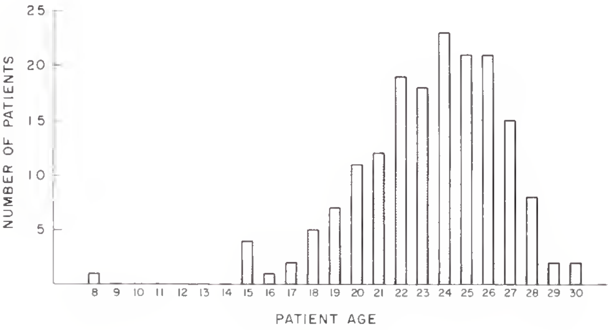


Figure 1
Age distribution of patients at the time of presentation for evaluation of DES exposure in utero.

Maternal DES usage histories are summarized in Table 1. In 71 patients (41%), the exact time of initiation and duration of DES exposure could not be determined. In eight patients (4%), medication was begun during the second trimester. In the remaining patients (55%), DES exposure was initiated prior to the thirteenth week of gestation and continued for various periods of time. Thus, at least 55% of patients studied had been exposed to the hormone during the first eighteen weeks of fetal life, the period which has been associated with the overwhelming majority of benign and malignant DES changes.[2,5,16]

Table 1

| *Trimester during which DES was administered* | *No. of Patients* | *%* |
|---|---|---|
| First | 55 | 32 |
| First & Second | 1 | 1 |
| First & Second & Third | 37 | 22 |
| Second | 4 | 2 |
| Second & Third | 4 | 2 |
| Third | 0 | 0 |
| Unknown | 71 | 41 |
| Total | 172 | 100 |

Indications for maternal DES therapy are presented in Table 2. One hundred and fifty-eight mothers of patients studied (74.4%) had had one or more previous pregnancies. Fifty-eight percent of these had had one or more previous spontaneous abortions. Indeed, previous spontaneous abortion was the most frequently cited indication for DES therapy (47%). Vaginal bleeding or threatened abortion constituted the second most commonly cited indication for intragestational hormone usage. Together, vaginal bleeding and previous spontaneous abortion accounted for nearly 70% of cases of DES exposure in our population.

Table 2

| *Indication for DES Therapy* | *No. of Patients* | *%* |
|---|---|---|
| History of Spontaneous Abortion | 81 | 47 |
| Bleeding During Current Gestation | 32 | 19 |
| Elderly Primagravida | 8 | 5 |
| Prior Spontaneous Abortion & Bleeding During Current Gestation | 5 | 3 |
| Infertility History | 5 | 3 |
| Prior Stillborn | 4 | 2 |
| Other: | 14 | 7 |
| Prior Postpartum Death | 2 | |
| Trauma | 2 | |
| Rh Incompatibility | 2 | |
| Chicago Lying-In Protocol | 2 | |
| History of Toxemia | 1 | |
| Hyperemesis | 1 | |
| Family History of Spontaneous Abortion | 1 | |
| Bleeding During Prior Gestations | 1 | |
| History of Abruption During First (Twin) Gestation | 1 | |
| History of Mentally Retarded Offspring | 1 | |
| No Known Indication | 23 | 13 |
| Total | 172 | 100 |

Maternal medical and surgical histories subsequent to DES exposure are summarized in Table 3 and 4. The medical illnesses most frequently cited were hypertension (17%) and obesity (6%). The surgical procedures most commonly cited were hysterectomy

(25%) and cholecystectomy (9%). The incidence of breast cancer was 7%.

Table 3
MATERNAL MEDICAL HISTORY

| *Diagnosis* | *No. of Patients* |
|---|---|
| Hypertension | 30 |
| Cancer: | |
| Breast | 12 |
| Uterus | 4 |
| Skin | 2 |
| Obesity | 10 |
| Phlebitis | 7 |
| Rheumatoid Arthritis | 6 |
| Hypothyroidism | 4 |
| Cardiac Disease | 4 |
| Pulmonary Disease | 4 |
| Varicose Veins | 3 |
| Diabetes Mellitus | 3 |
| Cataracts | 2 |
| Diverticulitis | 2 |
| Colitis | 2 |
| Lupus Erythematosis | 1 |

Table 4
MATERNAL SURGICAL HISTORY

| *Surgical Procedure* | *No. of Patients* |
|---|---|
| Hysterectomy | 43 |
| Cholecystectomy | 16 |
| Breast Biopsy (No Mastectomy) | 11 |
| Mastectomy | 10 |
| Thyroidectomy | 4 |
| Colectomy | 1 |

## Examination

Benign anatomical alterations were noted on gross inspection of the vagina and cervix in 74 patients (38%) (Table 5). Thirty-five patients (19%) exhibited a cervical protuberance or "cockscomb cervix." A cervical hood was noted in 11 patients (6%). A cervical collar was found in 21 patients (12%). Less common observations included transverse vaginal septum (1%) and obliterated vaginal fornix (3%), usually associated with a history of cryocauterization of the cervix.

Table 5

| *Gross Anatomic Alteration of Lower Reproductive Tract* | *No. of Patients* | *%* |
|---|---|---|
| "Cockscomb Cervix" | 35 | 19 |
| Cervical Collar | 21 | 12 |
| Cervical Hood | 11 | 6 |
| Obliterated Vaginal Fornix | 5 | 3 |
| Transverse Vaginal Septum | 2 | 1 |
| No Gross Abnormality | 98 | 59 |
| Total | 172 | 100 |

Papanicolaou smears of the cervix and endocervix were performed in 160 of the 172 patients evaluated. Twelve patients had normal Pap smears reported immediately prior to referral. Cervical cytology was normal in 147 patients (92%). Atypical metaplasia was present in 7 specimens (4%). Mild dysplasia was found in 3 smears (2%). Three cases of carcinoma-in-situ of the cervix (2%) which had been diagnosed prior to patient referral were confirmed by repeat cytologic evaluation.

Colposcopic examination was performed in 170 of 172 patients (Table 6). Colposcopy was normal in 27 patients (16%). The mosaic pattern, the most common colposcopic abnormality noted, was present in 113 patients (66%). Punctation was present in 57 patients (34%). Vaginal adenosis was detected in 19 patients (11%). In addition, the transformation zone was noted to be present in the vaginal fornix in 24 patients (17%), twelve of whom had been noted to have adenosis elsewhere in the vagina. The overall colposcopic incidence of vaginal adenosis was 18%. White epithelium was noted in 3 patients (2%). No abnormal vessels were noted.

Table 6

| *Colposcopic Abnormality* | *No. of Patients (N = 170)* | *%* |
|---|---|---|
| Mosaic Pattern | 113 | 66 |
| Punctation | 57 | 34 |
| Transformation Zone in Vaginal Fornix | 24 | 17 |
| Adenosis | 19 | 11 |
| White Epithelium | 3 | 2 |
| No Abnormalities | 27 | 26 |

Schiller's stain was performed in 127 patients. In 43 patients findings on Schiller's stain approximated those found on colposcopy. In 76 patients abnormalities on Schiller's stain appeared to be grossly more extensive than those observed on colposcopic examination. In the remaining eight patients abnormalities on colposcopy exceeded those found on Schiller's stain.

Biopsies from three sites—vagina, vaginal fornix and ectocervix—were obtained from 103 patients. If colposcopic or Schiller abnormalities were present at any of these sites, those areas were selected for biopsy. Anterior vaginal wall, anterior portion of vaginal fornix and cervical lip were chosen for biopsy in those patients with normal colposcopic examinations.

Histologic evidence of vaginal or vaginal fornix adenosis was found in 24 or 23% of the 103 patients. This is slightly higher than the 18% incidence of colposcopic abnormalities. Sixteen of these patients had glandular adenosis and 8 showed vaginal squamous metaplasia.

In the ectocervical biopsies glandular adenosis was found in 68 or 66% of the 103 patients and varying degrees of squamous metaplasia in 62 or 60% of patients.

A diagnosis of adenosis at any site was based on the presence of columnar epithelium, its products or metaplastic derivatives on the mucosal surface or lining the submucosal glands.

Direct adenosis (Figure 2), in most cases, was characterized by epithelium of the mucin-producing endocervical type. These cells were tall and columnar with round, regular basal nuclei beneath a granular to vacuolated cytoplasm. This cytoplasm contained mucin demonstrable by the alcian green method.

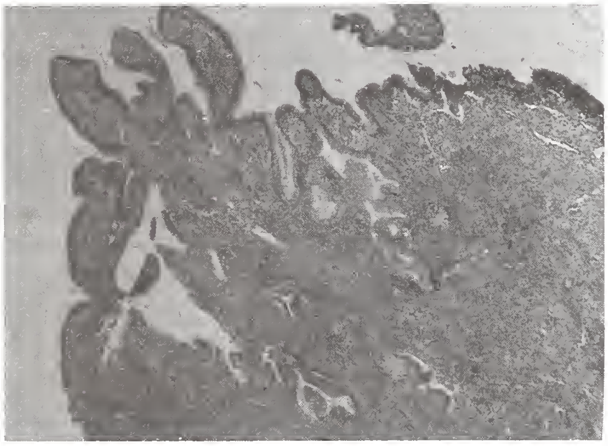


Figure 2
Section of anterior vaginal wall showing surface lined by tall, columnar cells with regular basal nuclei and granular cytoplasm. Similarly lined submucosal glands are seen. (Hematoxylin-Eosin, 40X).

Squamous metaplasia of the mucosal surface or submucosal glands varied through the spectrum of reserve cell hyperplasia and metaplasia of partial to complete degrees and of both the mature and usual types — all distinguishable from native squamous mucosa. The metaplastic cells (Figure 3) were plump epidermoid cells with homogeneous to vacuolated eosinophilic cytoplasm and regular oval nuclei with dispersed chromatin. They were more ovoid in overall shape and their nuclei were larger with a more open chromatin pattern than native squamous epithelium. Single cytoplasmic mucin droplets (Figure 4), as demonstrated by alcian green technique, were present at least focally in the metaplastic foci in all cases. Also observed in the epidermoid zones were intraepithelial pools of stainable mucin (Figure 4) surrounded by flattened cells.

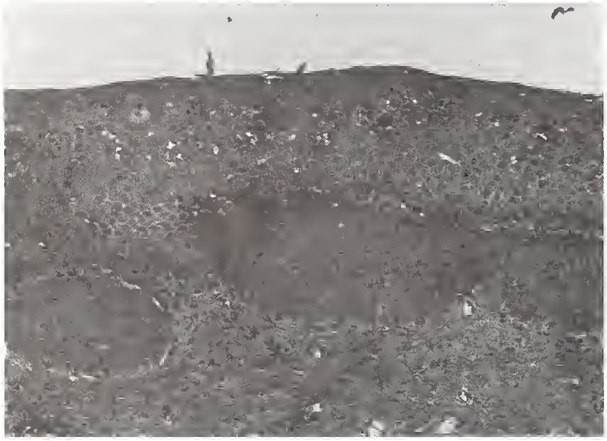


Figure 3
Section of anterior vaginal wall with surface lined by plump, eosinophilic epidermoid cells of a metaplastic type. (Hematoxylin-Eosin, 100X)

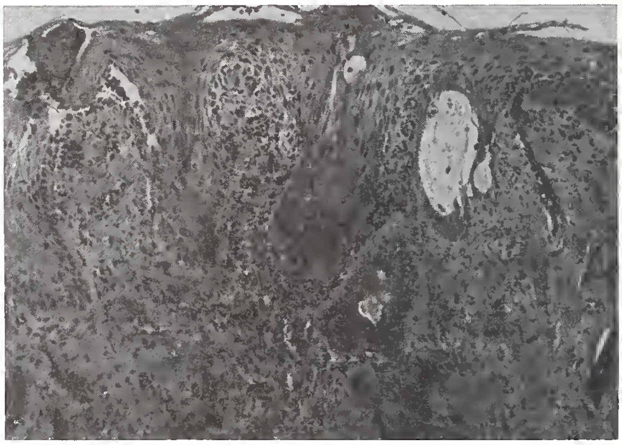


Figure 4
Section of anterior vaginal wall lined by plump metaplastic type of squamous epithelium with cytoplasmic droplets visible and also intraepithelial mucin pool. (Hemotoxylin-Eosin, 100X)

The mean age of patients evidencing cervical metaplasia and inflammation was 23, the same as that of the entire population under study. Although historical data was incomplete, there seemed to be a rough correlation between cervical metaplasia and inflammation and degree of sexual exposure, i.e., number of partners and years of exposure. There was no correlation between contraceptive method and cervical epithelial changes. Specifically, there seemed to be a preponderance of metaplasia and severe inflammation among oral contraceptive users (incidence of metaplasia = 53%).

## Discussion

In the current study, colposcopy, cytology, Schiller's staining and histologic examination were used to evaluate 172 patients with documented DES exposure. No cases of clear cell adenocarcinoma of the vagina were detected. The colposcopic incidence of vaginal adenosis was 18% while the histologic incidence was slightly higher at 23%. This incidence is lower than those cited in many previous studies (35-90%). Although no single explanation for this rather low incidence of vaginal adenosis could be found, some of the variation may be accounted for by timing of DES exposure (in 41% of patients the exact time of initiation of DES exposure could not be determined and may well have been after the "critical" 18th week of gestation), differences in histologic definitions, and differences in the definition of the cervicovaginal junction, as cervical collars and hoods were considered to represent cervical rather than vaginal tissue. Cytology and Schiller's stain were found to be considerably less helpful than colposcopy and histological examination in detecting vaginal adenosis.

Colposcopic abnormalities of the vagina and cervix were observed in 84% of patients (Table 6), but no new cases of intraepithelial neoplasia were detected. Squamous cell carcinoma-in-situ (CIS) was present in three patients studied; however, each lesion had been diagnosed by routine cytologic examination prior to the patient's referral. The prevalence of CIS in our population was approximately 2%. The prevalence is significantly higher than that in the general population (0.44%) and compares favorably with the prevalence rates reported in studies of DES population performed by Stafl and Mattingly and Noller et al.[10,11] In this instance, the prevalence rate may be deceptively elevated as the primary investigator (PES) is a gynecologic oncologist to whom the patients with CIS were referred for therapy as well as for evaluation of DES-related changes.

Patients in this study have been followed from 39 to 57 months. No new premalignant changes have been identified since the initial examination. Three patients with clear cell adenocarcinoma of the vagina or cervix were referred to the primary investigator for therapy during the time of the study. Each patient had an obvious lesion detectable on routine pelvic examination and two had markedly abnormal vaginal bleeding which led them to have a pelvic examination.

No cases of adenocarcinoma and malignant or premalignant squamous epithelial changes not previously diagnosed by PAP smear were detected in our screening of DES-exposed women. In addition, the authors have been able to identify only one report of DES-exposed patients developing adenocarcinoma of the vagina while under surveillance.[8] It would appear the incidence of progression from adenosis to adenocarcinoma is extremely low. It is therefore our opinion that while the initial evaluation of DES-exposed women should include the currently recommended modalities of colposcopy, cytology, Schiller's stain, and tissue examination of suspicious lesions, annual follow-up evaluations need include only careful inspection, palpation, and cytologic examination if the patient has demonstrated no vaginal or cervical abnormalities on initial colposcopic examination.

Patients with benign vaginal epithelial abnormalities, extensive transformation zones or grossly abnormal cervices on initial evaluation should be followed with serial colposcopic, as well as cytologic, examination, until the natural history of DES related adenocarcinoma has been better elucidated. Colposcopic examinations in this study were more specific for identifying sites of vaginal and cervical adenosis and other abnormalities than iodine staining. Routine screening should begin by age 14 or within one year of the onset of menses. Should a new change develop on routine pelvic examination, prompt evaluation including a biopsy must be performed as early clear cell carcinoma of the vagina may be submucosal in location and not detectable by routine cytologic screening or colposcopic inspection.

## REFERENCES

1. Herbst AL, Ulfelder H, and Poskanzer DC: Adenocarcinoma of the vagina; Association of maternal stilbestrol therapy with tumor appearance in young women, N Engl J Med 284:878, 1971
2. Ulfelder H: The stilbestrol-adenosis-carcinoma syndrome. Cancer 38:426-31, 1976
3. Poskanzer DC, and Herbst AL: Epidemiology of vaginal adenosis and adenocarcinoma associated with exposure to stilbestrol *in utero.* Cancer 39:1892-1895, 1977
4. Ng AB, Reagan JW, Mehrdad N, et al: Natural history of vaginal adenosis in women exposed to diethylstilbestrol *in utero.* The Journal of Reproductive Medicine 18:1-13, 1977
5. Herbst AL, Poskanzer DC, Robboy SJ, et al: Prenatal exposure to stilbestrol: A prospective comparison of exposed female offspring with unexposed controls, N Eng J Med 292:334-339, 1973
6. Burke L, and Antonioli D: Vaginal adenosis, factors influencing detection in a colposcopic evaluation. Obstet Gynecol 48:413-421
7. Herbst AL, Cole P, Colton T, et al: Age-incidence and risk of diethylstilbestrol-related clear cell adenocarcinoma of the vagina and cervix. Am J Obstet Gynecol 128:43-51, 1976
8. Anderson B, Watring WG, Edinger DD, et al: Development of DES-associated clear cell carcinoma: The importance of regular screening. Obstet Gynecol 53:293-299, 1979
9. Stafl A and Mattingly RF: Vaginal adenosis: A precancerous lesion? Am J Obstet Gynecol 120:666-673, 1974
10. Mattingly RF and Stafl A: Cancer risk in diethylstilbestrol-exposed offspring. Am J Obstet Gynecol 126:543-548, 1976
11. Noller KL, Decker DG, Fish CR et al: Presented at Annual Meeting of Soc Gynecol. Oncol., Key Biscayne, Florida, January, 1976
12. Sanberg EC and Hebnid JC: Examination of young women exposed to stilbestrol in utero. Am J Obstet Gynecol 128:364-369, 1976
13. Herbst AL, Scully RE, and Robboy SJ: Problems in the examination of the DES-exposed female. Obstet Gynecol 46:353-355, 1975
14. Townsend D: Techniques of examination and screen of the DES-exposed female in *Intrauterine Exposure in Diethylstilbestrol in the Human.* AL Herbst, Ed. ACOG, 1978 pp. 23-29
15. Stafl A: Colposcopy in evaluation of DES-exposed women in *Intrauterine Exposure to Diethylstilbestrol in the Human* AL Herbst Ed., ACOG, 1978, pp. 23-29
16. Robboy SJ, Friedlander LM, Welch WR, et al: Cytology of 575 young women with prenatal exposure to diethylstilbestrol. Obstet Gynecol 48:511-515, 1976
17. Sonek M, Bibbo M, and Wied GL: Colposcopic findings in offspring of DES-treated mothers as related to onset of therapy. J Reproduct Med 16:65-70, 1976

# Intussusception as an Unusual Complication of Metastatic Lung Cancer

MARTIN E. KATZ, M.D., IL SONG HAHN, M.D., GIL G. JOB, M.D.
AND ALLAN L. TOOLE, M.D.

**ABSTRACT—A 68-year-old man with large cell undifferentiated carcinoma of the lung presented with a small bowel intussusception secondary to a tumor metastasis after definitive radiation of his lung cancer. The pathophysiology and incidence of intussusception of the bowel in adults from metastatic malignant neoplasms is reviewed in detail.**

The incidence of hematogenous metastases to the bowel is approximately 2% of all fatal cases of widespread carcinoma.[1] Athough these lesions are generally part of a diffuse metastatic process, solitary metastases to the bowel from melanoma, lung cancer, breast cancer, choriocarcinoma, hypernephroma and gastric cancer have been reported. The following case illustrates the occurrence of intussusception within the small intestine as an unusual complication of metastatic lung cancer.

## Case Report

A 68-year-old white male smoker presented to his family physician with a two-week history of right lateral-posterior chest pain in concert with numbness and paresthesias of the right posterior upper arm. A chest x-ray revealed a mass lesion in the right upper lobe consistent with a Pancoast tumor. The patient was seen in oncologic consultation at which time physical examination revealed dullness and decreased breath sounds over the right upper lobe of the lung. There was no lymphadenopathy, skin or subcutaneous metastases, cardiac abnormalities, hepatosplenomegaly, bone pain or abnormal neurologic findings. An electrocardiogram, urinalysis, complete blood count and automated blood chemistry panel were all normal.

Bronchoscopic examination including cytologic washings was negative and a fluoroscopy directed closed needle biopsy of the tumor mass was performed with findings of giant cell carcinoma. The patient had a normal bone and liver scan and was treated with 4000 rads (200 rads per day in 20 fractions over 28 days) to the right upper thorax prior to plans for aggressive "curative" surgery.[2, 3]

Three weeks following the completion of radiation and one week prior to the planned thoracic surgery, the patient presented with a two-day history of progressive abdominal pain in association with intermittent nausea and vomiting. Evaluation at that time revealed evidence for a small bowel obstruction. At laparotomy 25 cm. of intussuscepted small bowel located approximately 120 cm. from the terminal ileum was evident. The leading edge of the intussuscepted small bowel contained a 4-5 cm. diameter tumor mass. The intussuscepted bowel was reduced and a local resection of small bowel was performed. A single tumor metastasis evident in the right lobe of the liver was also biopsied.

Post-operatively, the patient developed a new left supraclavicular nodal metastasis and was begun on combination chemotherapy with methotrexate, adriamycin, cyclophophamide and CCNU (Lomustine).[4, 5]

The small bowel tumor was a fungating cauliflower-like lesion, 4.5 cm. in greatest diameter. (Figure 1). The tumor mass occupied 75% of the circumference of the lumen and extended through the full thickness of the bowel wall. Microscopic examination of the small intestine and liver lesions revealed metastatic giant cell carcinoma with pleomorphic giant cells arranged in nests, covered with a mucosa which was focally ulcerated. The giant cells contained single or multiple large bizarre nuclei, prominent nucleoli and varying amounts of cytoplasm. (Figure 2). Many phagocytic giant cells with engulfed neutrophils or tumor cells were present. Mitotic figures were numerous. These cells were admixed with single nuclear anaplastic epithelioid cells and spindle cells. Differential features for squamous cell carcinoma, adenocarcinoma or bronchoalveolar carcinoma were lacking. Comparison with the original lung biopsy specimen revealed identical morphology of the tumor diagnostic of large cell carcinoma of the lung, giant cell subtype.

## Discussion

Intussusception of the bowel in adults is often caused by benign or malignant neoplasms in contradistinction

---

MARTIN E. KATZ, M.D., Assistant Clinical Professor of Medicine, Yale University School of Medicine; Attending in Medicine, Yale New Haven Hospital and The Hospital of St. Raphael. IL SONG HAHN, M.D., Attending Pathologist, The Hospital of St. Raphael. GIL G. JOB, M.D., Attending in Surgery, The Hospital of St. Raphael. ALLAN L. TOOLE, M.D., Attending in Cardiothoracic Surgery, Yale New Haven Hospital.

Reprint requests to: 60 Temple St., New Haven, CT 06510 (Dr. Katz).

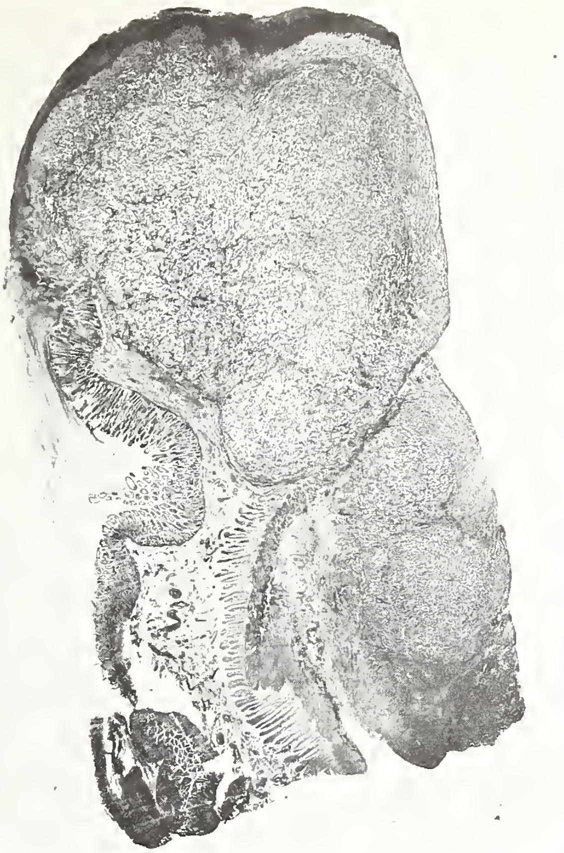


Figure 1

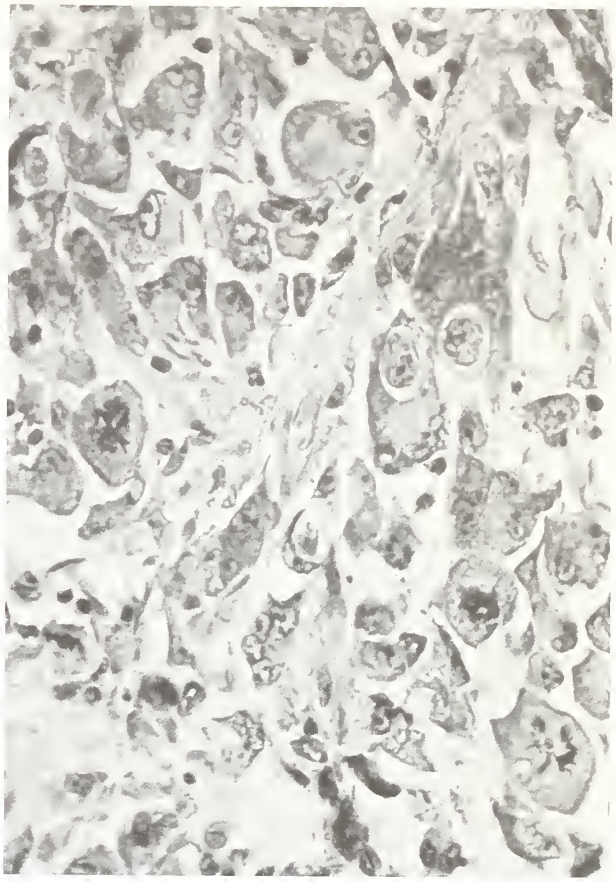


Figure 2

to pediatric intussusceptions which are idiopathic in more than 90% of the cases.[6] In the adult, intussusception can be caused by both primary and metastatic malignant tumors. Melanomas appear to be the singularly most frequent type of metastatic neoplasm capable of causing intestinal intussusception.[7-9]

Metastatic tumor usually involves the intestines directly by invasion from the peritoneum, by extension from contiguous visceral structures or by lymphatic permeation. More rarely, the bowel wall becomes the site of metastases by the hematogenous route.[1] Such metastases are almost invariably initially situated in the submucosa and are usually associated with peritoneal involvement or with lymphatic invasion of adjacent tissues. Metastatic tumors to the bowel are usually multiple as part of a widespread dissemination, but less commonly present as an isolated implant. In distribution, the small intestine is more often involved with metastases than the large intestine.

A submucosal intestinal metastasis initially spreads by submucosal infiltration and later may invade the mucosa and muscularis. Extension through the mucosa may produce an enlarging pedunculated mass projecting into the bowel lumen. If the tumor involves the subjacent muscle, peaking of this layer by traction may occur with dimpling of the external surface of the bowel lending toward an incipient intussusception. Three types of bowel involvement can be seen grossly: spherical mesenteric masses extending into the intestines, intramural masses, and intraluminal polypoid masses.[10] Mesenteric and intramural tumor implants are commonly associated with a desmoplastic reaction involving the mesentery and serosa with a resultant kinking of the bowel. In cases of intramural and intraluminal tumors, the lining mucosa is quite frequently ulcerated.

Obstruction is the most frequent complication of metastatic disease to the intestines whether from direct invasion or from hematogenous spread. Obstruction due to metastases is usually the result of a bulky mass of deforming fibrosis with adhesions of the serosa. Often, the primary neoplasm may be clinically quiescent or may have been surgically removed many years before. Perforation of the bowel by a secondary neoplastic growth is rarely seen.

Giant cell carcinoma of the lung is rare, but is a biologically aggressive neoplasm. It is currently categorized as a subgroup of large cell undifferentiated carcinoma in the World Health Organization classification. Ultrastructure and tissue culture studies support the concept that giant cell carcinoma is of epithelial origin.[11] In a recent retrospective review of metastatic patterns of large cell undifferentiated carcinoma of the lung, 80 patients were examined at autopsy.[12] Sixteen

(20%) of these patients had gastrointestinal metastases. However, no mention is made of the distribution of these lesions within the intestinal tract or of the frequency of symptoms and signs of the patients antemortem related to these bowel metastases. There are several isolated case reports of small bowel perforation secondary to a metastatic carcinoma of lung with two of the cases reported revealing giant cell carcinoma microscopically.[13, 14]

Our patient presented with an intussusception of the small bowel secondary to metastatic tumor shortly after radiation treatment of his primary giant cell carcinoma of the lung. Review of the literature suggests that this is an unusual but not surprising complication of lung carcinoma.

## REFERENCES

1. Willis RA: The Spread of Tumours in the Human Body, Butterworth, London, 1973, pp. 209-213
2. Hilaris BS, Loumanen RK, Beattie EJ: Integrated irradiation and surgery in the treatment of apical lung cancer. Cancer 27: 1369-1373, 1971
3. Paulson DL: Carcinomas in the superior pulmonary sulcus. J. Thoracic Cardiovasc Surg 70: 1095-1104, 1975
4. Chahinian AP, Mandel EM, Holland JF et al: MACC (Methotrexate, adriamycin, cyclophosphamide and CCNU) in advanced lung cancer. Cancer 43: 1590-1597, 1979
5. Vogl SE, Mehta CR, Cohen MH: MACC chemotherapy for adenocarcinoma and epidermoid carcinoma of the lung. Cancer 44: 864-868, 1979
6. Aston SJ, Machleder HI: Intussusception in the adult. Am Surg 41: 576-580, 1975
7. Karakousis C, Holyoke ED, Douglass HO: Intussusception as a complication of malignant neoplasm. Arch Surg 109: 515-518, 1974
8. Das Gupta TK, Brasfield RD: Metastatic melanoma of the gastrointestinal tract. Arch Surg 88: 969-973, 1964
9. Paglia MA, Evelby PE: Recurrent intussusception from metastatic melanoma. NY State J Med 68:3061-3062, 1968
10. Farmer RG, Hawks WA: Metastatic tumors of the small bowel. Gastroenterol 47: 496-504, 1964
11. Wang N, Seemayer TA, Ahmed MN, Knaack J: Giant cell carcinoma of the lung. Human Path 7: 3-16, 1976
12. Matthews MJ in Lung Cancer: Natural History, Prognosis and Therapy, edited by Lucien Israel and A. Philippe Chahinian, Academic Press, New York, 1976, pp. 56-58
13. Wellman KF, Chafiian Y, Edelman E: Small bowel perforation from solitary metastasis of clinically undetected pulmonary giant cell carcinoma. Am J Gastroenterol 51: 145-149, 1969
14. Midell AI, Lockman DJ: An unusual metastatic manifestation of a primary bronchogenic carcinoma. Cancer 30: 806-809, 1972

---

ELMCREST

A COMPREHENSIVE
MENTAL HEALTH TREATMENT CENTER
FOR ADULTS AND ADOLESCENTS

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Allen Cohen,** M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman,** M.D., F.A.P.A.
*Medical Director*

**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY

☐ CRISIS INTERVENTION AND EMERGENCY SERVICES

☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY

☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM

☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION

☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)

☐ GERIATRIC GUIDANCE CENTER

☐ DAY HOSPITAL

epi

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

# Toxic Shock Syndrome: A New Disease but an Old Phenomenon

ALFRED JAY BOLLET, M.D.

Great public consternation has been produced by press coverage of a few hundred cases of Toxic Shock Syndrome. Although there have probably been many unreported mild cases, fear of the disease and its economic impact on the tampon industry has been excessive in relation to the danger. This phenomenon is typical when a new disease appears in epidemic form. The appearance of Toxic Shock Syndrome is but the most recent example of a new disease appearing on the medical scene. Although its importance has been magnified by the effectiveness of modern communications, it illustrates a very important general phenomenon that we should all have in mind—the diseases that affect mankind keep changing. New diseases have been appearing throughout recorded history and old ones have waned or disappeared spontaneously or because of medical intervention; we should expect those phenomena to continue.

The new diseases that have received the most public attention recently are Legionnaire's disease and Toxic Shock Syndrome. In both instances we have evidence that the disease existed for some time before the outbreak that led to recognition and a formal name being applied by the medical profession. Fortunately naming them has given us power over them, both the power to diagnose and to treat them effectively.

It is not entirely clear how long the particular pathogenic organisms causing these diseases have existed; they may have arisen recently, either through mutation or by colonization of a strain of a previously existing organism by a bacteriophage or other plasmid. In the case of Toxic Shock Syndrome, the staphylococcus produces a toxin which has effects resembling those of the scarlatina toxin produced by streptococci. Interestingly it is believed that the strains of streptococcus which produce that toxin do so because of infection by a bacteriophage as is also the mechanism responsible for some strains of Corynebacterium producing the diphtheria toxin. Strains of streptococci which produce the scarlatina toxin seem to have become very rare, and scarlet fever is almost nonexistent, but now the staph producing a similar toxin have appeared on the medical scene.

The Legionnaire's bacillus is one of a family of Rickettsia-like organisms which were reported as early as 1943 at Fort Bragg, North Carolina, by a Lieutenant Tatlock. Similar disease occurred at St. Elizabeth's Hospital in Washington, D.C., in Pontiac, Michigan, and probably elsewhere before the famous outbreak in Philadelphia which killed several Legionnaires and a hotel.

In both Legionnaire's disease and Toxic Shock Syndrome a social change may be an important factor enhancing the ability of a relatively new organism to produce disease, or to cause the disease to occur at a greatly increased frequency. In the case of Legionnaire's disease the social change seems to be the development of large, industrial, water-cooled air-conditioning systems which provide a milieu for growth of the bugs. In the case of Toxic Shock, tampons absorbing menstrual blood apparently are an ideal culture medium and may abrade the vaginal mucosa sufficiently to allow colonization by the staphylococci, or to increase the penetration of the toxin. Both of these organisms may be increasing in abundance rapidly, and they may find other comfortable ecological niches; we may start seeing these diseases under other circumstances as well. Given how recently they have appeared on the medical horizon, it seems unlikely that we know all about the potential and variations of these diseases at the present time.

These new diseases are only the latest examples of this phenomenon. We can trace many important infectious diseases back to their initial outbreaks; examples include plague (The Black Death) which began in 1349 spreading rapidly from the Middle East across Europe that year and the next; syphilis, which first appeared in December 1494, during the siege of Naples by King Charles VIII of France and then spread around the world, its arrival in each country pinpointed in time; typhus, which appeared in 1490 among the troops of Queen Isabella, returning from a campaign on Cyprus, and subsequently spread to become the main cause of morbidity during military cmapaigns. Cholera first

---

ALFRED JAY BOLLET, M.D., Chairman, Department of Medicine, Danbury Hospital, Danbury, CT; Clinical Professor of Medicine, Yale University School of Medicine.

appeared in 1817 in Bengal, and then rapidly became pandemic, appearing in this country for the first time in 1832. Even relatively ancient diseases changed their frequency in recorded history; for example, tuberculosis which apparently was present in Ancient Greece judging from descriptions typical of Pott's disease, became much more of a problem, spreading throughout Europe, following the epidemic of plague in the fourteenth century. Tuberculosis became the leading cause of death in the nineteenth century in western Europe, but data show that it decreased in frequency from 1855 onward in England and Wales before the discovery of the tubercle bacillus; it had fallen by over 80 percent by the time chemotherapy began.

Non-infectious diseases have appeared in epidemic form as well. There was an epidemic of gout in eighteenth century England following a treaty with Portugal which allowed importation of Portugese wines at one-third the tariff of French wines. The long trip from Portugal resulted in a high rate of spoilage, leading to the wines being "fortified" by addition of brandy to increase the alcohol content. The brandy, it seems, had been stored in lead casks, and lead is soluble in alcohol; it was saturnine gout that afflicted the wealthy of England who imbibed huge quantities of port, sherry and sack. Saturnine gout is still a problem in the southeastern United States where moonshine is popular and lead solder used to hook up automobile radiators to function as condensers adds significant quantities of lead to the brew.

Epidemics of nutritional disease have occurred, generally following technological changes which have altered the type or quality of major dietary staples. For example, corn was introduced into southern Europe from the New World, and it yielded more calories per acre than previous grains. But when other foods were unavailable and corn was the only source of calories, such as in the late winter and early spring, pellagra appeared (first described in 1732 in Spain) because of the relative lack of tryptophane and niacin in corn. Similarly, the potato, also introduced into Europe from the New World, became a staple of the diet of the Irish, making them susceptible to the effects of a parasitic fungus introduced by ship from Peru and leading to the "potato blight," which caused repeated crop failures and famine in the late 1840's in Ireland.

When steel rollers were invented in Europe around 1870 and were introduced in the milling of rice in the Far East in the latter part of the nineteenth century, beriberi became epidemic. The highly polished rice was more attractive and less susceptible to spoilage; lacking the enzymes and co-factors, including thiamine, which made it decay more rapidly, it was also less nutritious.

Acute rheumatic fever has virtually disappeared; deaths from rheumatic fever and rheumatic heart disease have decreased from 17.3 per 100,000 in 1947, to 4.8 in 1977. Deaths attributable to hypertension have fallen to one-quarter the rate prevalent in 1950; this change is undoubtedly due to improved methods of detection, treatment and public education rather than a change in incidence of the disease. Coronary heart disease in the United States is probably the most important example of the changing frequency of disease in our time. Rather early in this century, it became an epidemic beginning in the 1920's, and for the past few decades, it has been the leading cause of death. It is decreasing dramatically in frequency however having fallen 21 percent in men between 1968 and 1976. The reasons for these changes are unquestionably environmental, with smoking, diet and exercise leading the list of likely candidates.

Similarly there have been interesting changes in the frequency of malignancies. Carcinoma of the lung has risen from a rare disease to become the most common type of cancer in men, and it threatens to replace cancer of the breast as number one in women unless smoking habits change (as they seem to be according to recent reports). This increase in the incidence of carcinoma of the lung has resulted in an increase in the death rate from all malignancies in the United States, but careful analysis of the data reveals that there has been no increase in the frequency of non-respiratory malignancies in men and a slight decrease in women. Individual sites of malignancy have shown striking decreases; most notable is carcinoma of the stomach, which has decreased by two-thirds since 1930. Peptic ulcer disease is also decreasing here and in western Europe.

The factors that have led to the decrease in frequency of a wide variety of diseases are a companion subject, deserving even more careful analysis as models of successes in preventive medicine.

Thus Toxic Shock Syndrome is but the latest example of a phenomenon that has been occurring as far back as we can tell and is increasingly frequent today. All diseases are changing, it seems, in frequency, severity, distribution, and even in their natural history. Environmental factors seem to be the main reason for these changes, whether they are contagious or metabolic diseases. Cultural changes, such as the smoking of cigarettes, the use of tampons, introduction of air conditioning, or changes in the processing of food are clearly important, as are personal habits of cleanliness and the use of personal toxins, such as cigarettes, alcohol and drugs. We are bombarded by concerns about our environment today, some of it reaching a level suggesting hysteria, but the general principle is valid and important. As physicians we must be alert to the changes in disease patterns occurring about us, to serve as an early warning system to the community when these cultural and industrial changes bring further changes in the frequency of disease or cause new diseases, like Toxic Shock Syndrome, to appear.

## REFERENCE

Bollet, A.J., "The Rise and Fall of Disease." *American Journal of Medicine,* 70:12, January, 1981.

# Important Advances in Clinical Medicine

## Epitomes of Progress—General Surgery

### Portal Hypertension

The diagnosis of hemorrhage from esophageal varices can only be made with certainty after other sites of hemorrhage have been excluded by endoscopy. Alcoholic patients have an increased incidence of gastritis, duodenal ulcer and Mallory-Weiss tear of the esophagus. Indeed, up to 30 percent of patients with documented esophageal varices who present with upper gastrointestinal hemorrhage are bleeding from a site other than their varices. Endoscopy frequently establishes varices as the origin of hemorrhage. If esophageal varices are present but not bleeding, they are nevertheless assumed to be the source of hemorrhage if other bleeding sites are excluded by endoscopic examination.

Although some enthusiasm persists for emergency portacaval shunts within eight hours of admission, most American surgeons attempt nonoperative arrest of hemorrhage by intravenous administration of vasopressin (Pitressin) or balloon tamponade (or both), interventions that control variceal hemorrhage in 80 percent to 90 percent of patients and make it possible for elective operation to follow. If forced to carry out an emergency shunt, we prefer the end-to-side portacaval shunt, although the mesocaval interposition shunt is favored by many. Because substantiation of the claims of technical simplicity or maintenance of hepatopedal flow with the mesocaval shunt are unproved, the high thrombosis rate of the mesocaval shunt makes it a second choice to the end-to-side portacaval shunt.

For elective shunts, the Warren distal splenorenal shunt is preferred over conventional portasystemic shunts, because of its lower incidence of postoperative encephalopathy. Moreover, with the Warren shunt, unlike conventional shunts, prolongation of life (in nonalcoholic cirrhotic patients and perhaps in alcoholic patients who stop drinking) has been reported. The Warren shunt is too technically challenging for emergency situations. The presence of significant ascites is a contraindication to a Warren shunt, and for patients with poorly controlled ascites, a side-to-side variety of shunt is preferred.

Two recently described techniques for direct control of the bleeding from esophageal varices are the extensive gastroesophageal devascularization of Sugiura (of Japan) and simple esophageal transection with a stapler. Although the role of these procedures is as yet unclear, the Sugiura procedure has failed to be as useful in American cirrhotic patients as expected. It is likely that esophageal transection procedures will be associated with a high rebleeding rate.

A common clinical dilemma occurs in patients with poor liver function (Child's C classification), who continue to bleed from varices in spite of conservative measures. An emergency portacaval shunt in patients with Child's C classification will have an operative mortality in excess of 50 percent. Because of the unacceptably high operative mortality of patients with Child's C classification, endoscopic sclerotherapy is being evaluated as an alternative to operation.

Richard A. Crass, MD

REFERENCES

Orloff MJ, Duguay LR, Kosta LD: Criteria for selection of patients for emergency portacaval shunt. Am J Surg 134:146-152, Jul 1977

Rikkers LF, Rudman D, Galambos JT, et al: A randomized, controlled trial of the distal splenorenal shunt. Ann Surg 188: 271-282, Sep 1978

Terblanche J, Northover JM, Bornman P, et al: A prospective evaluation of injection sclerotherapy in the treatment of acute bleeding from esophageal varices. Surgery 85:239-245, Mar 1979

### The Diagnosis of Jaundice

Clinical presentation, physical examination and biochemical findings frequently will provide sufficient information to establish a diagnosis in many patients who have jaundice. In a significant percentage of these patients, however, one or more of the newer radiological or nuclear medicine techniques will be necessary to differentiate between extrahepatic obstruction and hepatocellular disease. The noninvasive tests that have recently been employed in the diagnosis of jaundice include gray-scale ultrasound (GSU), computerized tomography (CT) and scanning of the biliary tract (scintigraphy) with various hepatobiliary agents labeled with technetium 99m. In addition, transhepatic cholangiography (THC) with the thin-needle (Chiba) technique and endoscopic retrograde cholangiography (ERC) have also been evaluated in jaundiced patients.

Ultrasound has been reported to have an overall accuracy as high as 95 percent in differentiating dilated from nondilated ducts although some series report only 50 percent to 75 percent sensitivity for GSU's ability to detect duct dilation. In comparison, CT has uniformly been reported to make this differentiation in more than 90 percent of jaundiced patients. A third noninvasive technique, biliary scanning, has also been shown to be very accurate in detecting complete bile duct obstruction. The ability of scintigraphy, however, to diagnose accurately patients with hepatocellular disease or partial duct obstruction has been reported to be only 88 percent and 81 percent, respectively.

Unfortunately, the ability of each of these noninvasive tests to consistently provide useful information about the exact cause and precise location of an obstructing lesion is limited, and the information provided by each of these tests may be no more accurate than a careful clinical assessment. By comparison, THC with Chiba needle is successful in opacifying dilated ducts in almost all cases. If failure to visualize the biliary tree is considered as evidence of hepatocellular disease, THC is able to differentiate medical from surgical jaundice with nearly 100 percent accuracy.

ERC has also been shown to be highly accurate in establishing the cause of jaundice. Both THC and ERC have the advantage of providing exact anatomic details; and although these procedures are invasive, they can be done with an acceptably low incidence of complications. Of these two procedures THC has the advantages of lower cost, wider availability and a high probability of success in patients with obstructed ducts. On the other hand, ERC should be employed in patients with coagulation defects, when THC has failed, or when duodenoscopy or pancreatography is likely to provide useful information.

Henry A. Pitt, MD

REFERENCES

Goldstein LI, Sample WF, Kadell BM, et al: Gray-scale ultrasonography and thin-needle cholangiography—Evaluation in the jaundiced patient. JAMA 238:1041-1044, Sep 5, 1977

Gold RP, Casarella WJ, Stern G: Transhepatic cholangiography: The radiological method of choice in suspected obstructive jaundice. Radiology 133:39-44, Oct 1979

Matolo NM, Stadalnik RC, Dixon SM: Value and limitations of scanning of the biliary tract. Surg Gynecol Obstet 150:521-524, Apr 1980

Elias E, Hamlyn AN, Jain S, et al: A randomized trial of percutaneous transhepatic cholangiography with the Chiba needle versus endoscopic retrograde cholangiography for bile duct visualization in jaundice. Gastroenterology 71:439-443, Sep 1976

## Transluminal Dilatation

Transluminal dilatation was introduced by Dotter in 1964. It has since gained wide acceptance in Europe and gradually increasing acceptance in the United States. The technique consists of passing a guide wire under fluoroscopic guidance through stenotic or occluded segments of atherosclerotic arteries and then advancing a catheter with a balloon attached to it over the guide wire. The balloon is then inflated in the diseased segment so as to dilate the artery. The balloons are designed in such a way that a given amount of pressure—for example, five atmospheres for many balloons—will inflate the balloon to a predetermined size. The newer balloons are designed so that even if more than the recommended pressure is applied the balloons will still not expand much beyond their stated size.

Transluminal dilatation has several attractive features. It requires only local anesthesia. No prosthetic material need be implanted. Collateral blood flow is either maintained or improved with dilatation and surgical procedures can be used later if the dilatation fails.

The disadvantages of transluminal dilatation are also several: Passage of the guide wire can lift intimal flaps which then cause occlusion. The guide wire can perforate the arterial wall. The balloon can become impaled on an intimal flap. Fragments of a fractured atherosclerotic plaque can embolize distally. And, finally, long-term results with transluminal dilatation in this country are still unknown.

Nonetheless, the incidence of complications is low enough so that transluminal dilatation may be offered to patients who are poor surgical candidates or, on a trial basis, to any patient who has a lesion that is short and appears favorable for dilatation. Dilatation of superficial femoral and iliac artery lesions has given good long-term results. Dilatation of renal artery lesions has given good short-term results with long-term results still unknown.

James W. Holcroft, MD
Daniel P. Link, MD

REFERENCES

Dotter CT, Judkins MP: Transluminal treatment of arteriosclerotic obstruction—Description of a new technic and a preliminary report of its application. Circulation 30:654-670, Nov 1964

Katzen BT, Chang J: Percutaneous transluminal angioplasty (PTA) with the Grüntzig balloon catheter: Technical problems encountered in the first forty patients. Cardiovasc Radiol 2:3-7, 1979

Grüntzig A, Kumpe DA: Technique of percutaneous transluminal angioplasty with the Grüntzig balloon catheter. Am J Radiol 132:547-552, Apr 1979

Martin EC, Diamond NG, Casarella WJ: Percutaneous transluminal angioplasty in non-atherosclerotic disease. Radiology 135: 27-33, Apr 1980

## Coronary Heart Operations

Surgical management is recommended for selected patients with coronary heart disease who have myocardial ischemia, mechanical complications of acute myocardial infarction, or medically intractable, symptomatic, ventricular tachyarrhythmias.

Coronary artery bypass is a physiologically effective means of increasing myocardial blood flow. This procedure is applied to patients with significant obstruction (75 percent or greater cross-sectional area) of one or more major coronary arteries who meet clinical or laboratory criteria for important myocardial ischemia. Prime surgical candidates are patients whose anginal symptoms are difficult to control medically or who, on noninvasive testing (exercise electrocardiography or thallium scintigraphy), have myocardial ischemia at low exercise levels. Because survival in ischemic heart disease is inversely related to the extent of coronary atherosclerosis and because it has been shown that patients with extensive coronary artery obstruction live longer when managed surgically, an operation should be considered in such patients even when symptoms are moderately well controlled.

Mechanical complications of myocardial infarction include mitral valvular regurgitation, ventricular septal rupture, ventricular wall rupture and left ventricular aneurysm. These commonly result in severe circulatory compromise and are treated by mitral valve replacement, closure of ventricular septal defect, infarctectomy and aneurysmectomy, respectively. When cardiogenic shock is present circulatory support with intraaortic balloon pumping is a beneficial adjunct to these procedures.

A promising new development is the surgical management of patients with ventricular tachycardia secondary to previous myocardial infarction. Recent studies suggest that intraoperative epicardial and endocardial mapping using multiple electrode probes is effective in precise localization of arrhythmogenic foci. Patients with symptomatic, medically refractory, ventricular tachyarrhythmias may benefit from surgical excision of these foci. It has been shown that the area of delayed conduction thought to be critical for reentrant ventricular tachycardia can be localized in the border between the aneurysm and normal muscle. These areas are not usually removed with standard aneurysmectomy. Intraoperative localization followed by subendocardial resection combined with aneurysmectomy appears to provide better antiarrhythmic management than aneurysmectomy alone.

Daniel J. Ullyot, MD

### REFERENCES

Hurst JW, King SB 3rd, Loque RB, et al: Value of coronary bypass surgery—Controversies in cardiology: Part I. Am J Cardiol 42:308-329, Aug 1978

Mundth ED: Surgical treatment of cardiogenic shock and of acute mechanical complications following myocardial infarction. Cardiovasc Clin 8:241-263, 1977

Horowitz LN, Harken AH, Kastor JA, et al: Ventricular restriction guided by epicardial and endocardial mapping for treatment of recurrent ventricular tachycardia. N Engl J Med 302:589-593, Mar 13, 1980

## Amputation

The latest advance in lower extremity amputation for arterial occlusive disease is the concept of a team approach for optimum patient management. The team consists of a surgeon, radiologist, prosthetist, physical therapist and social worker. The surgeon initially evaluates the patient and develops a data base indicative of the patient's overall health status. In addition, the surgeon will evaluate the extent of the ischemic process in the extremity so as to make a decision whether or not the ischemia can be reversed by vascular reconstruction or if the level of amputation might be lowered with an improvement of blood supply.

If limb salvage or preservation of limb length is feasible, detailed angiographic visualization of the aorto-femoral-tibial system will be carried out by the radiologist in order to ascertain operability of the diseased vasculature. If the process is irreversible, or if the extent of the vascular occlusive problem is not reasonably operable, precise amputation level selection can be established by using skin blood flow measurements with isotope clearance techniques. Xenon Xe 133 is injected into the skin of the extremity at the most distal site that would encompass the gangrenous or infected process and blood flow is measured in order to ascertain whether or not there is sufficient circulation to permit skin wound healing. Should the blood flow be inadequate, the next higher anatomic site would be sampled. Once the most distal anatomic amputation level, possessing adequate skin blood flow, has been identified, the amputation is carried out by the vascular or orthopedic surgeon in a meticulous manner that recognizes the importance of atraumatic handling of poorly vascularized skin in a patient with arterial occlusive disease.

Following completion of the amputation, a prosthetist, skilled in the techniques of immediate postoperative fitting, enters the operating room and applies a rigid plaster dressing to the extremity. A prosthetic device is incorporated into the cast. The morning following operation, the patient is begun on limited weight bearing and ambulation under the supervision of a physical therapist.

The author's experience with this approach at the Veterans Administration Medical Center in San Francisco and at the University of Arizona, Tucson, has shown that mortality for below-knee amputation could be lowered from 16 percent to 0 percent, failure of healing due to ischemia could be virtually eliminated, and the likelihood of ambulation on a prosthetic device, providing the knee joint was spared, could be virtually assured in all patients who were able to walk before the necessity for amputation. This approach has resulted in a reduced hospital stay without compromise of rehabilitation because the patient can be discharged able to walk following the first cast change, approximately ten days following amputation. With a reduced hospital stay the technique is remarkably cost-effective and the ability to achieve the primary goal of amputation, rehabilitation using a permanent prosthesis, becomes routine. This team approach is now being employed with enthusiasm at the Center for Health Sciences and the affiliated hospitals of the University of California, Los Angeles.

Wesley S. Moore, MD

REFERENCES

Moore WS, Hall AD, Lim RC Jr: Below the knee amputation for ischemic gangrene—Comparative results of conventional operation and immediate postoperative fitting technic. Am J Surg 124:127-134, Aug 1972

Moore WS: Determination of amputation level—Measurement of skin blood flow with xenon Xe 133. Arch Surg 107:798-802, Nov 1973

Roon AJ, Moore WS, Goldstone J: Below-knee amputation—A modern approach. Am J Surg 134:153-158, Jul 1977

Malone JM, Moore WS, Goldstone J, et al: Therapeutic and economic impact of a modern amputation program. Ann Surg 189:798-802, Jun 1979

UNIVERSITY OF MARYLAND

## The Surgical Treatment of Obesity

The prevalence of morbid obesity, the limitations of nonoperative treatment and patient demand for effective therapy stimulate continuing attempts by surgeons to devise safe and effective procedures to accomplish sustained weight loss. Jejunoileal (JI) bypass accomplishes more reliable and permanent weight loss than any form of nonoperative treatment. Thus, early patient satisfaction is high (above 80 percent) despite the occurrence of life-threatening complications. A pattern of late (beyond five years) complications has emerged including oxalate nephrolithiasis (as high as 43 percent), migratory polyarthritis (5 percent to 10 percent) and bypass enteropathy consisting of abdominal pain and distention, increasing diarrhea and flatus (up to 50 percent). Other complications have appeared beyond five years including cirrhosis of the liver and bone demineralization. JI bypass is still recommended by some surgeons for selected patients with hyperlipidemia but the number of JI bypasses done has diminished notably and reconstitution has been increasingly frequent.

Gastric procedures for morbid obesity involve creation of a small proximal gastric pouch and either a gastrojejunostomy (gastric bypass) or creation of a stoma from the pouch to the remainder of the stomach (gastroplasty). The gastric procedures offer a lower incidence of late complications, and in limited comparative studies have produced early weight loss comparable to JI bypass. Dissatisfaction with the long-term weight loss has led Mason and colleagues to a series of refinements of technique. At a recent bariatric surgery workshop at the University of Iowa three technical modifications of gastric bypass and 11 modifications of gastroplasty were presented. It was agreed that the gastric reservoir must be small (30 to 50 ml), and the opening to the jejunum or body of the stomach must be no greater than 8 to 12 mm in diameter. Roux-en-Y gastrojejunostomy is preferred for gastric bypass. The use of gastric staples must be reinforced with a second application or sutures. The stoma in gastroplasty may dilate and a variety of techniques to prevent this are being evaluated. The associated complications include operative mortality (0 percent to 10 percent), failure of weight loss (20 percent to 30 percent), stomal obstruction (0 percent to 10 percent) and stomal ulceration (1 percent). Further follow-up will be necessary to determine the ultimate role of gastric procedures for relief of morbid obesity.

Bruce M. Wolfe, MD

REFERENCES

Scott HW Jr: Surgical experience with jejunoileal bypass for morbid obesity. Surg Clin N Am 59:1033-1041, Dec 1979

Van Itallie TB, Burton BT: General summary. *In* Symposium on surgical treatment of morbid obesity. Am J Clin Nutr 33:528-530, Feb 1980

## Initial Circulatory Support: Fluid Management

Successful treatment depends on rapidly gaining major access to the vascular space by the insertion of one or more venous catheters. The number of catheters will depend on the severity of shock. A cutdown on the long saphenous vein at the ankle is the surest and quickest way to gain access. A cutdown on the basilic vein in the antecubital space is also desirable so that central venous pressure monitoring can be achieved.

In these circumstances the primary goal is to restore adequate plasma volume. During the first 24 hours, it is advisable to use primarily balanced salt solution and whole blood. In mild or moderate shock, it makes little difference what type of intravenous fluid is used—balanced salt solution, normal saline, plasma or plasma products. Cost and availability may be the prime factors in determining which is preferable. However, in severe shock, the type of fluid used is important. This statement is based on the premise that in severe shock (particularly sepsis), endothelial permeability may be increased. Thus, if the endothelium is altered by the shock insult, a "capillary leak" occurs, and the type of fluid to be administered should be based on physiologic principles (Starling's forces).

In the treatment of hemorrhagic shock, the initial resuscitation with crystalloids is favored because the solutions are readily available, effectively restoring vascular volume for short periods and lowering blood viscosity while enhancing resuscitation of the microcirculation. Time is thereby gained for definitive typing and cross-matching of blood, and if the patient continues to bleed during the period of resuscitation, the infused crystalloid solution is expendable (that is, blood bank reserves are not wasted and are available for restoration of blood volume after bleeding has been controlled). Provided the oxygen-carrying capacity of the blood is supplemented by increased oxygen in the airway, it is almost impossible to dilute the blood sufficiently to prevent adequate tissue oxygenation.

The colloids used to treat hypovolemic shock consist of blood, plasma, serum albumin and plasma substitutes such as dextran. Although type O Rh-negative blood was at one time routinely used for resuscitation, major hemorrhage requires massive transfusion; the minor mismatch that often results from transfusion of type O Rh-negative blood may thus be magnified and result in serious morbidity or even fatal reactions. Consequently, type-specific blood should be used, even if it is not cross-matched. When possible, it is preferable to treat with crystalloid solutions while awaiting complete cross-match.

Plasma fractions, including albumin and albumin-containing solutions (Plasmanate), are contraindicated during resuscitation of deep sustained hypovolemic shock. Because of alteration in endothelial permeability or microvascular forces, particles below a molecular weight of 240,000 will leak into the interstitial space, thus increasing tissue oncotic pressure. These interstitial proteins must be mobilized by tissue lymphatics, a process that may take as long as one or two weeks. This prolonged interstitial edema may be deleterious in such organs as the lungs and brain. In contrast, the interstitial edema that results from crystalloid administration is transitory because the fluid is mobilized back into the vascular space and excreted by the kidneys, usually on the second or third day after shock.

Dextran is the most widely used plasma substitute at present. Two types are available: clinical dextran, with a molecular weight of 70,000, and low molecular weight dextran, with a molecular weight of 40,000. Clinical dextran is the most effective colloid because it stays in the vascular system for up to 24 hours. Its disadvantage in hemorrhagic shock is that it interferes with blood typing and may impair the coagulation and immune mechanism. Low molecular weight dextran (LMWD) is a relatively short-acting colloid, staying in the vascular system approximately eight hours. It interferes much less with blood typing and does not usually depress the coagulation mechanism in dosages of less than 1.5 grams per kg of body weight per 24 hours. Above this amount, LMWD decreases platelet adhesiveness, reducing hemostasis.

Donald D. Trunkey, MD

REFERENCES

Sturm JA, Carpenter MA, Lewis FR Jr, et al: Water and protein movement in the sheep lung after septic shock: Effect of colloid versus crystalloid resuscitation. J Surg Res 26:233-248, Mar 1979

Weaver DW, Ledgerwood AM, Lucas CE, et al: Pulmonary effects of albumin resuscitation for severe hypovolemic shock. Arch Surg 113:387-392, Apr 1978

Pirkle JC Jr, Gann DS: Restitution of blood volume after hemorrhage: Role of the adrenal cortex. Am J Physiol 230:1683-1687, Jun 1976

## Colostomy

A colostomy is a stoma created in the colon with the intent to divert the fecal stream from the distal bowel. A colostomy may be prophylactic, as when it is made in the transverse colon to protect a tenuous anastomosis in the rectal segment. The colostomy is maintained until the anastomosis is secure at which time it is closed. Such colostomies are easily made by bringing a loop of colon up above the skin and passing a rod through the mesentery to hold the bowel on the abdominal wall. The loop colostomy does not completely divert bowel contents and therefore is more suitable in the cleansed and decompressed colon. A delayed loop colostomy is a rapid and safe expedient to decompress the obstructed colon, as the stoma is made after the peritoneal cavity has had time to seal about the raised loop of colon, generally 24 hours.

A therapeutic colostomy on the other hand is intended to more completely and permanently divert the fecal stream. The bowel is divided, as distal as possible, to allow for a formed and therefore more manageable excreta. The proximal end is brought out through the abdominal wall in a separate incision (end colostomy). The distal stoma (mucous fistula) may be brought out through the lower pole of the major incision. Therapeutic colostomies are commonly done in conjunction with resection of diseased colon where a primary anastomosis is not feasible or is hazardous. The end sigmoid colostomy made as part of an abdominal perineal resection is an example.

Loop colostomies in the ascending and transverse colon are difficult to manage over extended periods because the fecal material tends to be liquid or semisolid, foul smelling and both copious and continuous. Maintaining a sealed collecting appliance over the stoma is difficult, and leakage and soiling are common. Distal-end colostomies, in contrast, are easily managed with an appliance or may be irrigated once or twice daily and do not require the use of an appliance.

Construction of a colostomy while conceptually easy is technically demanding, particularly in the obese. The mortality in patients receiving a colostomy is high (15 percent to 25 percent) primarily as a result of the underlying disease. Complications such as retraction, prolapse, necrosis and hernia about the site occur in one of every five patients and in 5 percent to 10 percent of these patients reoperation will be required. Wound infections are common. Closure of the colostomy has a mortality of about 1 percent and significant leaks of the closure occur in approximately 5 percent of patients.

Edward Passaro, Jr, MD

REFERENCES

Abrams BL, Alsikafi FH, Waterman NG: Colostomy: A new look at morbidity and mortality. Am Surg 45:462-464, Jul 1979

Todd GJ, Kutcher LM, Marowitz AM: Factors influencing the complications of colostomy closure. Am J Surg 137:749-751, Jun 1979

## Burn Management

Significant improvements in the care of patients with burns have been made recently resulting in a substantial decrease in mortality and morbidity. Aggressive fluid resuscitation with a balanced salt solution remains a key to improved early survival. The ideal salt solution remains undetermined. Ringer's lactate or hypertonic lactated saline are both used with success. Colloid is a useful adjunct, best used about 18 hours after the burn. Better understanding of the metabolic effects of a burn have resulted in the use of aggressive nutritional therapy primarily by the enteral route. This has resulted in a measurable decrease in the rate of sepsis and a reversal of the postburn immune deficiency state.

Another advance in the prevention of sepsis has been a more aggressive debridement of the burn wound either by early excision to fascia in the full thickness burn or tangential excision for partial thickness injury with early grafting. This aggressive approach has yielded good results in young patients. However, it appears to be contraindicated in the elderly or those patients with superimposed respiratory damage. The use of biological dressings as a temporary skin cover has also resulted in improved survival rates in large burns where donor sites are limited. Cadaver skin is the best temporary cover. However, pigskin is also very useful. Early diagnosis and treatment of smoke inhalation with vigorous pulmonary care and ventilatory support has substantially decreased the mortality from this disorder. Bronchoscopy is a very useful diagnostic tool for making that early diagnosis. Steroids have not been found to be useful in this injury. Current areas of progress include improved artificial temporary skin covers and new means of pharmacologically manipulating the burn wound, as well as better understanding and control of burn-induced immune deficiency and hypermetabolism.

Robert H. Demling, MD

REFERENCES

Proceedings of the NIH consensus development conference in supportive therapy in burn care. J Trauma 19 (Suppl):855-939, Nov 1979

DelBeccaro EJ, Robson MC, Heggers JP, et al: The use of specific thromboxane inhibitors to preserve the dermal microcirculation after burning. Surgery 87:137-141, Feb 1980

Baker CC, Miller CL, Trunkey DD: Predicting fatal sepsis in burn patients. J Trauma 19:641-648, Sep 1979

UNIVERSITY OF MARYLAND

## Modern Era of Kidney Transplantation

Although the 25th anniversary of kidney transplantation has just been observed in Boston, a modern period of rapid development is anticipated. New methods of immunosuppression, tissue-typing (mainly DR matching), coupled with international cooperation of transplantation centers are areas in rapid evolution.

### *Matching for DR Locus*

Persijn and co-workers reported 80 percent cadaver graft survival at six months with zero DR mismatches compared with 67 percent with two DR mismatches. Ting and Morris had 100 percent graft survival at three months with two DR matches, 80 percent at three months with one DR matching and 68 percent with zero DR matching. Terasaki's group reported 100 percent cadaver graft survival at three months with two DR matches compared with 53 percent with zero DR matches. It is important to note that the numbers of full DR-matched patients were extremely small in all of these groups. Albrechtson's claim was more modest when he noted 65 percent one-year cadaveric graft survival in two DR-matched groups compared with 22 percent one-year survival in zero DR-matched recipients.

### *New Drug—Cyclosporin A*

Recently, a fungal metabolite—cyclosporin A—has excited interest as a possible unique addition to the armamentarium of immunosuppressive drugs. It inhibits humoral immunity as shown by reduction of plaque-forming cells in mice. It also suppresses cell-mediated immunity as seen by its effectiveness in preventing graft versus host disease. Morris's group has shown its effectiveness in dog renal allografts and found no hepatotoxicity or nephrotoxicity. They suggested that the drug does not produce clonal deletion of the lymphocytes but merely their suppression. Calne reported its use in 54 patients where it was given initially as the only immunosuppressive agent. There were 12 deaths (22 percent). Besides this high mortality, the side effects were impaired renal function and liver dysfunction. Increased incidence of viral infections and malignancy have also been reported. Starzl commented that mortality in his own series is quite low, because he used cyclosporin in addition to steroids.

### *Anti-idiotype Antibodies*

The production of autoantibodies against clones of antigen-reactive cells reactive to donor histocompatibility antigens producing specific self-unresponsiveness is an important concept in transplant immunology. There is increasing evidence that immunologic unresponsiveness can be induced by either suppressor T-cells or antibodies directed against the T-cell receptor, that is, anti-idiotypic antibodies. The term anti-idiotype has been used to describe the T-cell antigen binding site. This immunization protocol would lead to specific unresponsiveness against relevant allo-antigens while leaving the third-party cell intact. The feasibility of inducing specific tolerance of the host towards donor transplantation antigens by autoimmunization has far-reaching clinical implications and this must be pursued further.

### *Total Lymphoid Irradiation*

Samuel Strober, MD, of Stanford University has reported an entirely different method of increasing allograft survival: use of total lymphoid irradiation (TLI). He noted long-term depression of immune function in patients with Hodgkin disease treated with fractionated doses of TLI. They also observed that heart transplants in mice and monkeys were prolonged with TLI. But in dogs the result was not reproducible, only 50 percent of the allografts survived. Grafts versus host disease was not seen in their experiments. Najarian has used TLI only in patients receiving third grafts, for a total dose of 3,250 rad, 125 rad per day for five days per week. All these patients also received standard immunosuppressive drugs. None of their kidneys were rejected. However, the number is small and the follow-up period is too short. Most feel concerned about increased incidence of neoplasms in these patients, especially of the lymphoma group. TLI totally eliminates lymphocytes also affecting the host suppressor cells, therefore the results may not be reproducible in humans.

*Monoclonal Antibodies*

Antithymocyte globulin raised against human T-cells in horses and in rabbits has been used in transplant patients since Woodruff reported its usefulness in animal experiments as early as 1963. Because the T-cell population consists of a number of subclasses, it is not surprising that the immunization of an animal with human lymphoid cells results in a multispecific response. With the use of cell hybridization techniques, a number of monoclonal antibodies with specific reactivity to human T-cell subclasses has now been prepared. Monoclonal antibodies raised against T-cytotoxic cells, T-helper cells and B-cells may be used in clinical practice in the near future.

Satya N. Chatterjee, MD

REFERENCES

van Hooff JP, van Es A, Persijn GG, et al: Cadaveric graft survival, clinical course, blood transfusions, HLA (A and B), match, and DR match in adult patients transplanted in one centre. Proc Eur Dial Transplant Assoc 16:359-365, 1979

Homan WP, French ME, Millard P, et al: Studies on the effect of cyclosporin-A upon renal allograft rejection in the dog. Surgery 88:168-173, Jul 1980

## Blood Transfusion

Many new trends and practices have evolved in hemotherapy. Modern hemotherapy is based on the assumption that administered blood products are targeted to an identified hematologic defect. Component therapy has rapidly become standard practice; two thirds of dispensed blood products are now in the form of components, rather than whole blood in many areas.

The liquid preservative of choice in most blood banks is now citrate-phosphate-dextrose (CPD). CPD-adenine, a citrate preservative with added purine nucleotide, is now licensed, and allows extension of shelf-life of liquid preserved blood from 21 days (CPD) to 35 days (CPD-adenine). The major advantage of both preservatives—over the older preservative, acid-citrate-dextrose (ACD)—is superior preservation of 2,3 diphosphoglycerate (2,3 DPG), the major mammalian organic phosphate which regulates the affinity of hemoglobin for oxygen.

The Standards Committee of the American Association of Blood Banks has recommended that hemolysin testing for ABO antibodies in plasma be discontinued. The effect of this judgment is that universal donor O-negative blood with low plasma titers to A and B antibodies is no longer available and red cell concentrates, washed before transfusion, are the preferred transfusion unit, to insure minimal recipient sensitization.

Blood substitutes, an area of research that has been of greater interest in Japan, Europe and the Soviet Union than in the United States, have received renewed interest. Although gradual improvement in oxygen transport characteristics and safety of stroma-free hemoglobin has occurred, it has yet to become available to patients. Perfluorochemicals, however, have been recently used in Jehovah's Witnesses, in lieu of blood transfusion. Although perfluorochemicals remain an experimental drug requiring an investigative new drug (IND) permit, selected approval for use has been granted by the Food and Drug Administration. The problems associated with the development of perfluorochemicals relate to the need to keep current preparations frozen to maintain stability, slow excretion of current perfluorochemicals from the body, efficacy and lack of information about long-term effects. It remains to be determined if this family of chemicals has a role in hemotherapy.

A significant continued category of problems affecting hemotherapy surrounds the availability and procurement of blood products and governmental regulations. The American Blood Commission, founded to unify agencies procuring and dispensing blood, and to develop a national blood policy, has yet to secure agreement between the major organizations—the American Red Cross and the American Association of Blood Banks—as to donor policy. Hearings have been held on the Blood Assurance Act of 1979, sponsored by Senator Richard S. Schweiker. The controversy continues to focus on whether credits should be allowed for donors for future use, and the appropriateness of a replacement deposit fee. The effect of disallowing recruitment incentives by legislation is unknown, as to the potential impact on total blood supply locally or nationally. A recent law suit in California by the State Department of Consumer Affairs against the Irwin Memorial Blood Bank of the San Francisco Medical Society concluded with the nonreplacement fee remaining blood bank policy.

Because of the demands on available blood resources and the minimal priority that the lay public places on blood donation, surgeons must assume increasing responsibility for encouraging patients and families to provide blood donations. Through hospital transfusion committees, implementation of maximal surgical blood order schedules should become standard practice to more efficiently utilize this precious resource.

George F. Sheldon, MD

REFERENCES

Sheldon GF: Hemotherapy in a trauma center, chap 2, *In* Barnes A, Umlas J (Eds): Hemotherapy in Trauma and Surgery—A Technical Workshop. Washington, DC, Committee on Technical Workshops, American Association of Blood Banks, 1979

Standards for Blood Banks and Transfusion Services, 9th Ed. Washington, DC, Committee on Standards, American Association of Blood Banks, 1978

UNIVERSITY OF MARYLAND

## Recent Developments in Trauma Management: The Ruptured Spleen

One of the new concepts in trauma which remains controversial pertains to the management of the ruptured spleen. It is now recognized that a patient after splenectomy has an increased risk for infectious complications. This is well established in the pediatric age group where lack of humoral immunity renders a child after splenectomy vulnerable to virulent infections, particularly those related to the encapsulated organisms —pneumococci and meningococci.

There also is a peculiar vulnerability in adults—especially to acute postoperative infections. The risk of infection following trauma to the spleen with splenectomy is ten times that of corresponding injuries to the liver (5.0 percent versus 0.5 percent).

These observations have led surgeons to attempt to save ruptured spleens. Overenthusiasm in saving spleens that are badly traumatized has in turn led to immediate bleeding complications. These hemorrhagic complications may pose greater immediate threat to a patient than infection. Despite papers to the contrary, hemoperitoneum requires operative diagnosis. Transfusion in quantity, based on the assumption that a ruptured spleen is present, and if present, will cease to bleed, is inappropriate.

At present it appears that in children under 10 years of age it is appropriate to carry to some length the attempt to salvage all or a portion of the spleen. In young adults, it is appropriate to try to save spleens that are grossly intact in which there is no hilar injury, whereas in adults over the age of 40 years and patients with associated major injuries the spleen should not be saved unless the injury is minimal.

Based on our experience, it is our estimate that 50 percent of spleens in children can be salvaged, 20 percent to 30 percent of those of young adults, and 10 percent to 20 percent of older adults. However, if the surgeon is inexperienced in trauma management, conservatism still dictates splenectomy in cases in which there is any doubt about appropriate management.

F. William Blaisdell, MD

REFERENCES

Buntain WL, Lynn HB: Splenorrhaphy: Changing concepts for the traumatized spleen. Surgery 86:748-760, Nov 1979

Ein SH, Shandling B, Simpson JS, et al: Nonoperative management of traumatized spleen in children: How and why. J Pediatric Surg 13:117-119, Apr 1978

Mishalany HG, Mahour GH, Andrassy RJ, et al: Modalities of preservation of traumatized spleen. Am J Surg 136:697-700, Dec 1978

Steele M, Lim RC Jr: Advances in the management of splenic injuries. Am J Surg 130:159-165, Aug 1975

Gopal V, Bisno AL: Fulminant pneumococcal infections in "normal" asplenic hosts. Arch Intern Med 137:1526-1530, Nov 1977

*Reprinted with permission from The Western Journal of Medicine, December 1980*

---

## Disciplinary Action Against Physicians Increases

There was an 85% increase in state disciplinary actions against physicians from 1977-78, according to the AMA. Much of this increase can be attributed to the steadily rising number of *state laws that grant immunity* to physicians who report indiscretions and possible malpractice on the part of their colleagues.

In its latest survey of licensing boards, the AMA found that 6,801 physicians were investigated for a wide variety of professional misconduct in 1978, compared with 3,662 in 1977. Of the 6,801 physicians investigated, *1,476 physicians underwent some form of disciplinary action.*

—*AMA Impaired Physician Newsletter,* January 1981

# Hypertension in the Elderly

NATIONAL HIGH BLOOD PRESSURE
EDUCATION PROGRAM COORDINATING COMMITTEE

### Introduction

Characteristically, systolic blood pressure rises with age in westernized industrialized societies. Although common, isolated systolic elevations in persons over 65 should not be considered normal since they usually reflect a disease process, atherosclerosis of the aorta.

There is scientific evidence that increased morbidity and mortality in people over 65 years of age are associated with elevations of the systolic blood pressure alone (isolated systolic hypertension) as well as with systolic-diastolic elevations. These two categories of hypertension are considered separately throughout this statement.

Several questions are addressed in this statement:

- How meaningful are indirect blood pressure measurements in the elderly?
- At what levels of blood pressure should treatment be initiated and what hypertensive drugs should be used for people over 65?
- Are there any side effects specific to or more common in elderly patients?
- What effect, if any, does treatment have on longevity?

Side effects and adherence are given special consideration since they can represent additional problems in managing hypertension in older people.

### Prevalence and Risk

Approximately 40 percent of white people and more than 50 percent of black people over 65 years of age have either isolated systolic hypertension *or* systolic-diastolic hypertension.

PREVALENCE OF HYPERTENSION AMONG MEN AND WOMEN, BLACK AND WHITE, AGE 65-74*

| | |
|---|---|
| Black women | 58.8% |
| Black men | 50.1% |
| White women | 42.3% |
| White men | 35.3% |

* Health and Nutrition Examination Survey (HANES), 1971-1974, published in Vital and Health Statistics, Series 11, Number 203. Blood Pressure Levels of Persons 60-74 Years, United States, 1971-1974, National Center for Health Statistics, U.S. Department of Health Statistics, U.S. Department of Health, Education and Welfare, September 1977.

Systolic-diastolic hypertension is defined as systolic blood pressure$>$160 mm Hg with a diastolic$\geqslant$90 mm Hg. As in younger persons, these elevations represent primary hypertension in the majority of cases.

Isolated systolic hypertension is defined in this paper* as systolic $>$160 mm Hg with a diastolic $>$90 mm Hg. This is the more common form of hypertension in the elderly.

Data from the Framingham Study indicate that hypertension, whether systolic or diastolic, is a risk factor for cardiovascular morbidity and mortality in older persons as in younger ones. Systolic-diastolic hypertension ($>$160/95 mm Hg) doubles the risk of

---

The National High Blood Pressure Education Program Coordinating Committee is a policy-making body whose purpose is to improve coordination and collaboration among national organizations involved in high blood pressure control. The Committee is composed of representatives of a number of professional and voluntary medical and health organizations. It is chaired and sponsored by the National Heart, Lung, and Blood Institute, National Institutes of Health. Among the activities of the Committee are defining priorities, exchanging views, promoting new initiatives in high blood pressure control, sponsoring a national conference, and coordinating High Blood Pressure Month in May of each year.

Revised April 1980: This revision includes new data from the Hypertension Detection and Follow-up Program. The revised Statement supersedes the original document approved in September 1979.

For further information, contact: High Blood Pressure Information Center, National High Blood Pressure Education Program, National Heart, Lung, and Blood Institute, 120/80 National Institutes of Health, Bethesda, Maryland 20205

*There is no universally accepted definition of hypertension among the elderly. This issue is among many being considered by the Joint National Committee on Detection, Evaluation, and Management of Hypertension which is currently reviewing and updating its 1977 recommendations.

mortality in men and increases this risk in women by two and one-half times that for normotensive women.

Borderline systolic-diastolic hypertension (140/90 to 160/95 mm Hg) increases the risk of morbidity amd mortality in men by one and one-half times, and doubles the risk in women.

Isolated systolic hypertension $\geqslant 180$ mm Hg increases the risk of stroke and of death from coronary disease by two and one-half times in persons aged 65-74 compared to people in the same age group with systolic blood pressures $<180$ mm Hg.

Hypertension may also be an etiologic factor in senile dementia when it is due primarily to vascular disease. However, there is no evidence that early, appropriate treatment of hypertension can prevent senile dementia.

## Benefit of Antihypertensive Therapy

### Systolic-Diastolic Hypertension

The value of antihypertensive therapy in reducing total mortality has been demonstrated in patients aged 30-69 years with diastolic blood pressures greater than 89 mm Hg. Although only 22 percent of patients included in the relevant study** were 60-69 years of age, the benefit to those patients in terms of reduced morbidity and mortality was as positive as in younger patients.

### Isolated Systolic Hypertension

No similar prospective double-blind trial has been carried out to assess the value of treatment in patients with isolated systolic hypertension. Until this is done, no definitive recommendation can be made regarding levels of isolated systolic blood pressure at which treatment should be initiated in elderly patients or whether they should be treated at all, despite epidemiologic data that show increased risk. For those cases in which the individual practitioner deems such treatment appropriate, however, guidance is offered.

## Detection

Multiple blood pressure measurements should be made before labeling any patient hypertensive or deciding on treatment because systolic blood pressure fluctuates widely in elderly patients with rigid, atherosclerotic aortas.

Blood pressures should be measured in both sitting and standing positions because significant orthostatic decrease in blood pressure is sometimes encountered in elderly patients. Blood pressure determinations should be made three times on each of three separate days before deciding on treatment. In all persons with elevated readings, patient eduation begins with the initial blood pressure measurement.

In the case of systolic-diastolic elevation, recommendations for detection and confirmation are the same as for younger persons, as stated in the Joint National Committee's report on "Detection, Evaluation and Treatment of High Blood Pressure." For purposes of community screening, patients over 65 years of age with systolic blood pressures $>160$ on two separate visits should be referred even though the diastolic blood pressure is $<90$ mm Hg.

Questions have been raised about the accuracy of indirect blood pressure measurements in elderly persons because of sclerotic changes in the arterial wall. Until definitive studies are done, use of indirect measurements with a cuff of appropriate size should continue as the basis for treatment decisions. Available limited studies indicate that indirect measurement is misleading in only a small number of elderly patients.

## Evaluation

In elderly persons with either systolic hypertension or well-established systolic-diastolic hypertension, the same case that is made in younger patients can be made for avoiding undue, extensive evaluation for secondary causes. An extensive work-up is indicated in the elderly if there has been abrupt exacerbation of stable hypertension indicating that a secondary factor, such as renovascular disease, has been superimposed upon primary hypertension.

If diastolic hypertension appears *de novo* after age 55, or if the hypertension proves resistant to a good medical regimen, secondary causes should be investigated. Malignant hypertension in patients older than 65 is almost always secondary, usually to renovascular disease. It should be recognized that medical treatment may be preferred in managing some elderly patients with secondary hypertension, especially renovascular hypertension.

## Drug Therapy

### General Considerations

Most elderly patients can be treated with a minimum of side effects if proper precautions are taken in the choice of drugs, and dosage is increased very gradually over a period of weeks rather than days. The low blood volume and reduction in baroreceptor reflex activity frequently found in people over 65 may serve to increase responsiveness to antihypertensive agents.

Because inadequate diet in these patients may make them more susceptible to the hypokalemic effects of an oral diuretic, appropriate dietary changes should be emphasized and the need for potassium supplementation considered. The use of relatively inexpensive salt substitutes with a high potassium content is especially helpful in this group of patients. Weight control and judicious exercise, while helpful adjuncts, are not always feasible in the older group.

### Systolic-Diastolic Hypertension

The goal of treatment for systolic-diastolic hypertension in elderly patients is the same as for younger patients: to reduce diastolic blood pressure to below 90

UNIVERSITY OF MARYLAND

---

**Hypertension Detection and Follow-up Program mm Hg, or by at least 10 mm Hg if pretreatment diastolic blood pressure is <100 mm Hg.

The same stepped-care regimen is followed as with younger patients; however, initial doses should be reduced and dosages increased very gradually.

If the hypertension remains resistant to second and third step drugs, more extensive evaluation for secondary causes may be warranted. Simultaneous introduction of two or three drugs is indicated only in a patient with severe diastolic as well as systolic hypertension.

### Isolated Systolic Hypertension

Many practitioners elect not to treat elderly patients with isolated systolic hypertension because of anticipated hazards from sudden decrease in blood pressure. While it is true that older patients may not tolerate marked orthostatic changes in blood pressure, it is often possible to lower the systolic pressure to acceptable levels without producing any clinically significant orthostatism or a decrease in the diastolic blood pressure. Treatment of isolated systolic hypertension may be worthwhile if only on the basis that it can reduce the workload of the left ventricle which is dependent upon the systolic more than the diastolic level of blood pressure.

If the decision is made to treat isolated systolic hypertension, the goal of therapy, at least initially, should be to reduce the systolic blood pressure to within an acceptable range (140-160 mm Hg) rather than to normalize the blood pressure (⩽140 mm Hg). If reduction of systolic blood pressure to this range is well tolerated, cautious attempts may be made subsequently to reduce it further.

Oral diuretics can be used as the initial step in therapy and are frequently effective as the sole agent in controlling systolic hypertension in these patients. Step two drugs such as methyldopa or clonidine may be added to the regimen when the diuretic alone has not adequately controlled blood pressure. Hydralazine may be added as a third agent if necessary and can sometimes be used as a step two drug as it usually does not cause reflex tachycardia in elderly patients because of their sluggish baroreceptor activity. It has been reported that beta adrenergic blocking drugs have not been as effective for controlling blood pressure in elderly patients with isolated systolic hypertension as they are for younger patients.

Dietary management (salt and calorie restriction) may be prescribed as an alternative to drug therapy in some patients. If dietary measures do not achieve blood pressure goal, consideration should be given to initiating drug therapy.

## Other Management Considerations*

### Complications

The presence of other complicating conditions and the accompanying need for multiple medications may present special problems in elderly patients. However, treatment should not be withheld in anticipation of management problems or side effects.

The need to take multiple medications may adversely affect a patient's adherence to a regimen. Additional patient counseling is probably indicated.

Complications such as congestive heart failure, symptomatic atherosclerotic heart disease or cerebrovascular disease make the indications for reducing blood pressure more, not less, urgent.

The presence of diabetes mellitus in some patients does not rule out the use of antihypertensive drugs, including oral diuretics, but may require appropriate dietary changes or dosage adjustment of hypoglycemic agents.

Similarly, gout is not a contraindication to the use of antihypertensive agents including oral diuretics, if the gout is properly managed.

Renal function is often diminished in elderly hypertensive patients, and this must be taken into consideration in selecting therapeutic agents.

### Side Effects

Certain side effects from antihypertensive agents occur more frequently in the elderly than in younger patients. Side effects such as hypokalemia and/or hyponatremia, drowsiness, or mental confusion can usually be managed by appropriate changes in diet and/or drug regimen and rarely require cessation of antihypertensive therapy all together.

Reduction in initial doses and increases in dosages over extended periods can often minimize or entirely eliminate side effects in elderly patients. A few agents, such as those producing severe orthostatic hypotension (guanethidine), should be avoided unless blood pressure remains at high levels.

### Psychosocial Factors

With elderly patients, practitioners need to be aware of additional psychological, physical, and social factors which may adversely affect adherence to therapy. Such factors include:

- Patients on inadequate or poorly balanced diets are more susceptible to the hypokalemic effects of an oral diuretic.
- Impediments in hearing or eyesight may make instructions difficult to understand and carry out.
- Mental confusion may result in improper use or complete neglect of medications.
- Elderly patients often have more difficulty in opening safety caps than most children do, detracting from adherence.
- Living alone and the absence of reinforcement from family and friends may hinder adherence.
- Fixed incomes and limitations on health insurance benefits may discourage elderly patients from ac-

---

* Irrespective of the type of hypertension

quiring prescribed medications or keeping appointments.

The need for frequent follow-up visits until blood pressure has been stabilized by therapy may have to be balanced against the limited financial resources of the elderly patient. The frequency of office visits can sometimes be reduced by taking advantage of reimbursable homecare services, community blood pressure screening programs, or public health nursing facilities.

### Recommended Action Steps

Many physicians still decide to treat hypertension in elderly patients less agressively than in younger people. Because the benefit of treating isolated systolic hypertension has not been demonstrated, a prospective double-blind trial is urgently needed to provide this information. Findings would allow recommendations to practitioners for initiating drug treatment at specific levels of systolic blood pressure. A definitive study should also be done to determine the accuracy of indirect blood pressure measurement in the elderly.

If and when evidence of the benefit of therapy in elderly patients is established, further progress will also be needed in health care financing, enabling elderly patients to acquire prescribed medications and health education services with little or no out-of-pocket expense. These are among the issues currently being studied by the House Select Committee on Aging.

UNIVERSITY OF MARYLAND

### Recommendations for Detection, Evaluation, and Therapy

The NHBPEP Coordinating Committee recommends the following general considerations regarding systolic-diastolic or isolated systolic hypertension in the elderly:

- Blood pressure should be measured in the sitting and standing positions at each visit.
- Three blood pressure determinations per visit should be made on multiple visits in elderly patients with initial elevated readings.
- Extensive diagnostic work-up is not recommended unless abrupt exacerbation of stable hypertension or *de novo* onset after 55 raises the level of suspicion. Then, secondary causes should be sought.
- Antihypertensive agents known to produce severe orthostatic hypotension, such as guanethidine, should probably be avoided.
- Patients should be encouraged to bring all of their medications with them at each visit to facilitate identification.
- Containers without safety caps are recommended for elderly patients.
- Initial doses of chosen agents should be reduced by one-half the usual initial adult dose for elderly patients.
- Dosages should be increased very gradually over a period of weeks rather than days unless the blood pressure is very high.
- Followup visits should be scheduled every two to four weeks until the blood pressure has stabilized as the result of antihypertensive therapy. After control has been established, visits may be required no more often than every three to four months.
- A CAVEAT. Practitioners should be alert to the hazard of adverse drug interactions in older persons on multiple medications. Over-the-counter preparations may increase this hazard. Patients on multiple medications may require additional counseling to deal with adherence problems.

### Recommendations Specific to Isolated Systolic Hypertension

A firm recommendation to treat this form of hypertension in elderly patients cannot be supported by the available evidence on treatment benefits. If the decision is made to treat, the following suggestions are offered:

- Blood pressure measurements should be made on multiple visits before deciding about therapy.
- The initial goal of therapy should be to reduce the systolic blood pressure to within an acceptable range (140-160mm Hg) rather than to normalize the blood pressure.
- Dietary interventions may be prescribed as an alternative to drug therapy in certain elderly patients, bearing in mind the goal blood pressure. If satisfactory results with dietary measures cannot be achieved or maintained, drug therapy should be considered.

### Recommendations on Patient Education in Elderly Patients*

Special adherence problems often result from the physical, psychological, and social limitations of elderly people. Professionals counseling elderly hypertensives may have to make innovative use of existing skills and available materials and resources to help these patients achieve high blood pressure control.

- Discussions with the patient should be very specific about what to do and how to do it. The initial session should be limited only to the task(s) essential to achieve high blood pressure control, e.g., pill-taking routine.
- Written material and memory aids which reinforce verbal instructions should be given to patients and family members for home use. These aids should be selected with attention to patients' hearing and sight impairments as well educational background and present mental status.
- The first few minutes of each visit should be used for reviewing medications and for specific questioning and listening to the patient for clues to problems such as side effects, forgetting medication, poor

---

* Irrespective of the type of hypertension

eating habits, or financial difficulties with acquiring medications. This is especially important when the stated treatment goal is not being achieved.

- The number of medications and the schedule for taking them should be as simple as possible to encourage adherence.
- Prescribing new medications in small quantities until the drug(s) of choice is/are established will reassure the patient with limited financial resources.
- Insofar as possible, providers should ensure that patients acquire and refill prescribed medications: nursing and pharmacy personnel may facilitate the monitoring of adherence.
- Adjuncts to therapy such as weight loss, dietary sodium restriction, and judicious exercise can be employed for some elderly patients.
- A portion of one or more visits spent with the patient's spouse, close relative, or neighbor can build support for the total hypertension control regimen.
- The patient living alone should be encouraged to identify a neighbor or an active friend who can offer reinforcement (even by phone) or provide transportation to office visits.
- Where appropriate, regular social service agencies, community or public health services/departments, or senior citizen programs should be identified to assist the elderly patient with other special needs such as benefits, meals, home nursing visits, transportation, and other services, many of which may be reimbursable through private insurance or public assistance.

AYR INSURANCE AGENCY

ALLENBY H. AYR ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

# The FTC and Health Care: The Role of Competition

MICHAEL PERTSCHUK

UNIVERSITY OF MARYLAND

It is not exactly surprising that the FTC's entry onto the health care scene has been greeted by providers with all the enthusiasm one would expect for a second coming of the bubonic plague. After all, it is not as if health care is suffering from a lack of government attention or a paucity of regulation.

I realize, of course, that there are no words in the English language more suspect than "I'm from the federal government and I'm here to help you." Nonetheless, there is a natural affinity between the FTC and those health care providers who decry the encroachment of regulation upon their freedom. For it is our primary role to see to it that competition functions freely throughout our economy as the most efficient and least intrusive regulator of market behavior. Our basic mission in health care, therefore, is to explore the role competition may have as an alternative or complement to regulation.

I am here today to suggest some reasons why competition, in some cases, may be a very attractive option. I stress *may* because experience with competition among health care providers has been mixed, primarily because competition in this sector is apparently seldom based on price. In fact, a great deal of competition in health care is concentrated on supply. For example, competition for slots in medical, dental and veterinary schools is keen. And, teaching hospitals compete vigorously for top-notch residents and apparently use sophisticated diagnostic equipment to attract high quality personnel for their medical staffs.

Direct and open competition among private practice physicians has long been assumed. For example, physicians compete for patients, particularly during the early years of practice. They also compete for geographic location and access to certain types of patients through their choice of residency programs. Financially successful physicians share certain qualities with successful businessmen—economic motivation, dominant personality, and aggressive traits. This, by the way, is according to a longitudinal study of medical school graduates completed by the Association of American Medical Colleges.

Non-price competition also flourishes among physicians for hospital privileges and professional prestige. The social benefits of this form of competition are often touted by physicians. We are told that intense competition among doctors has produced a health care system that delivers high quality care, encourages technological innovation, and provides ready access to care for Americans.

However, because of what we know about how competitive markets perform, price competition might do more. In a competitive market, price probably is the most important signal by which buyers can measure the performance of many different sellers, and sellers can compare themselves to other sellers. Competitive markets tend to accomplish four objectives: they minimize waste, increase efficiency, provide incentives for innovation, and decentralize decision making. These objectives seem to be very similar to those being pursued by public and private efforts to contain health care costs, to enact national health insurance, and to assure continued autonomy for individual practitioners in caring for their patients.

Even taking the special characteristics of the health care market into account, there is reason to believe that increased price competition could work to achieve greater efficiency and control costs. Competition could restrain rising costs if hospitals and physicians had stronger incentives to worry about the cost of the care they provide. More price awareness could also encourage innovation that reduces the costs of care instead of increasing it. Of course, competition advocates have to recognize the importance of quality of care and gains in access achieved by social programs such as Medicare and Medicaid.

In areas where direct price competition has been

---

MICHAEL PERTSCHUK, Chairman, Federal Trade Commission, Washington, D.C.

EDITOR'S NOTE: This talk was given at the National Journal Health Conference, Washington, D.C. on June 7, 1979 and still represents FTC philosophy.

tried, preliminary indications are promising. For example, in Minneapolis-St. Paul, eight health maintenance organizations compete for enrollees based on price, convenience of service, and benefits. The market share of HMOs in Minneapolis-St. Paul has increased from two to ten percent in just seven years. But growth has not been easy. When the first HMO, Group Health, began in 1955, local providers were hostile. They reportedly responded by denying Group Health physicians access to hospitals. When this did not work, and they found that they were losing patients to Group Health, local providers set up their own HMOs. Now, HMOs organized by Blue Cross, Blue Shield and the Hennepin County Medical Society vigorously compete with other HMOs for patients.

It is still too early to determine the extent to which competition has stabilized or lowered prices in Minneapolis. But we should soon be able to see what benefits, if any, competition has produced. And, if we do see benefits, wouldn't we be foolish not to encourage the growth of similar organizations in other areas?

Physicians and dentists throughout the country are experimenting with different forms of practice. We now have group practice partnerships, professional corporations, salaried prepaid groups, and fee-for-service prepaid groups. Providers are experimenting with diverse ways to organize and finance care because they prefer considerable latitude in setting up their practices. Because consumers' preferences vary, they benefit, too. Some consumers like to choose the kind of care they will receive in advance and they choose an HMO. Others want the freedom to choose not only their physician or dentist but also which hospital or clinic they will use at the time when they need care—they choose fee-for-service practitioners. And some consumers are receiving care from, for lack of a better phrase, Allied Health Practitioners, who may be practicing on an independent basis. A market with several alternatives lets both providers and consumers sort out which characteristics they value according to their own needs. Financing mechanisms and delivery systems that rely on competition to give both consumers and providers incentives to control costs may prove to be attractive not only to consumers and providers, but also to government policymakers.

You might well ask, "If competition is so great, why don't we see more of it?" Unfortunately, competition in this industry runs up against several impediments.

First, widespread insurance makes it difficult to apply the "laws" of supply and demand. Traditional forms of prepayment and insurance dull consumer and provider sensitivity to price. Decisions about which insurance options will be offered to a particular employee group are made by employers or unions, not by individuals. If an employer picks up the entire cost of health benefits, instead of providing a set amount for each employee to use in purchasing coverage, there are few incentives for employees to choose the lowest cost option.

Second, public regulation of health care facilities and professional licensing may stifle cost-saving innovation. Health care facilities, particularly hospitals, may be among the most heavily regulated institutions in the United States. Many state hospital associations, most recently those in Maryland and New York, have documented the heavy administrative burden imposed by federal, state and local regulation. While much of this regulation reflects legitimate concerns about health, safety, cost and quality of care, some of it may cause more problems than it solves. For example, some regulations may conflict. The Maryland Hospital Association found that one state agency told hospitals to autoclave waste before disposing of it while another specifically prohibited waste from being autoclaved and required it to be shipped in leakproof containers. Furthermore, some regulations may be duplicative. The same Maryland study found that twelve different agencies regulate patients' rights in Maryland. Although differences in those regulations are slight, separate written reports are required by each agency. Is this really necessary? A more fundamental and difficult question to resolve is how much regulations add to costs, and whether the benefits of the regulation can be achieved at less expense.

I hasten to note that regulation comes in many forms in the health field. Private regulation—such as standard setting through certification, accreditation, or other seals of professional approval—is pervasive. In some instances, private regulation may be pro-competitive. It provides information to consumers, or other providers, about the qualifications of an individual (such as a board certified specialist) or the characteristics of an institution (such as a JCAH-approved hospital). But, if private standards are used to limit entry for no other reason than to benefit economically those who are already "in," then antitrust scrutiny and enforcement may be in order. Similarly, incorporating private standards into public regulation without examining their competitive impact may give one group an unfair market advantage over others.

What has the FTC been doing to foster competition in the delivery of health services? Basically, we have a two-pronged approach: antitrust enforcement when we have reason to believe that competition has been unjustifiably suppressed, and consumer protection approaches that facilitate better-informed decisions and freedom from unfair or deceptive practices. In authorizing staff investigations, the commission has emphasized four avenues of possible commission action: structural changes, elimination of collusion, use of disclosure, and providing consumers with options at the point of sale. Let me go into each of these in a bit more detail, giving examples from our health program.

Three years ago, the Commission authorized its staff to investigate the Blue Shield network of medical service plans. Recently, the staff forwarded a report to the Commission recommending the initiation of rule-making. The staff proposed a trade regulation rule which would limit participation by physicians and physician organizations on boards of Blue Shield plans and other open panel medical prepayment plans. Underlying this recommendation is the staff's notion that under both antitrust and conflict-of-interest principles, physicians ought not to be making the very significant decisions concerning their own reimbursement that Blue Shield plans inevitably make. If the staff recommendations are ultimately accepted by the Commission, the proposed rule would provide structural relief for the alleged unfair methods of competition associated with control of these plans by physician groups.

The Commission also has taken action in several instances where professional groups allegedly mounted anticompetitive campaigns against potential competitors or insurers. For example, our investigations of an alleged HMO boycott by the Medical Service Bureau of Spokane, Washington and an alleged dental insurance boycott by the Indiana Dental Association resulted in consent agreements stipulating that these professional groups would refrain from acting in concerted fashion to fight HMOs or insurer efforts at cost-containment. By now, I hope professional groups have received the message: they are not immune from antitrust enforcement, and we are prepared to utilize it.

Disclosure is a consumer protection remedy often suggested by our staff to relieve alleged abuses in the sale of over-the-counter drugs and consumer-purchased medical devices. A staff paper by the FTC's Office of Policy Planning last year also proposed disclosure to remedy alleged abuses in the sale of insurance policies to supplement Medicare.

In the Eyeglasses Trade Regulation Rule, adopted last June, the Commission struck down state and private bans on advertising by ophthalmologists and optometrists and required these professionals to give patients a written prescription when an eye examination shows that corrective lenses are needed. By freeing up advertising and separating diagnosis from treatment, our rule should foster competition. In fact, preliminary evidence indicates that price competition for eyeglasses is strong in areas where advertising flourishes, and average prices have dropped considerably.

Of course, diagnosis and treatment usually go hand in hand. Separating them might only add to costs and heighten inconvenience for some episodes of illness. But, there may be instances, like eyeglasses, where cost savings might result from the separation.

As you know, public regulation is appropriately being scrutinized for its all too frequent adverse economic effects. Current disenchantment with command-and-control regulation may stem from too much faith being placed in one method to assure wise use of scarce health care resources. As we have seen, command-and-control regulation alone is not sufficient to remedy health care market problems.

The challenge of regulatory reform is in finding alternatives to existing regulation that don't result in throwing the proverbial baby out with the bath water. Market incentives—either in the form of freed-up competition or market-oriented regulation—are attractive alternatives. At the FTC, we are looking carefully at health care services to identify points where the market might work better if certain barriers were removed. If economic or social conditons require regulation, we look for the least restrictive approach so that both providers and consumers can retain as much individual choice as possible.

The time is ripe for all of us—whether we are policymakers, regulators, law enforcers, or industry representatives—to come up with serious proposals for regulatory reform in health care. In this context, it isn't really much help for the private sector to decry restrictive public regulation while at the same time vehemently defending private regulations that have similar economic effects. Likewise, public officials need to consider a range of alternatives, including support for incentives to stimulate competition among providers or insurers, when faced with so-called market failure. Although competition may have its limits in this industry, both inherently and because of current methods of financing, the industry's current characteristics are not immutable. The market could be relied on much more to allocate resources and keep costs down.

There are, of course, limits on the FTC's role in health matters, but we hope our initiatives will, in themselves, benefit the public and, at the same time, stimulate Congress, other federal agencies, and the states to seriously consider competition and increased use of disclosures and options for consumers as alternative means for increasing efficiency, ensuring public accountability, and allocating the supply of health services.

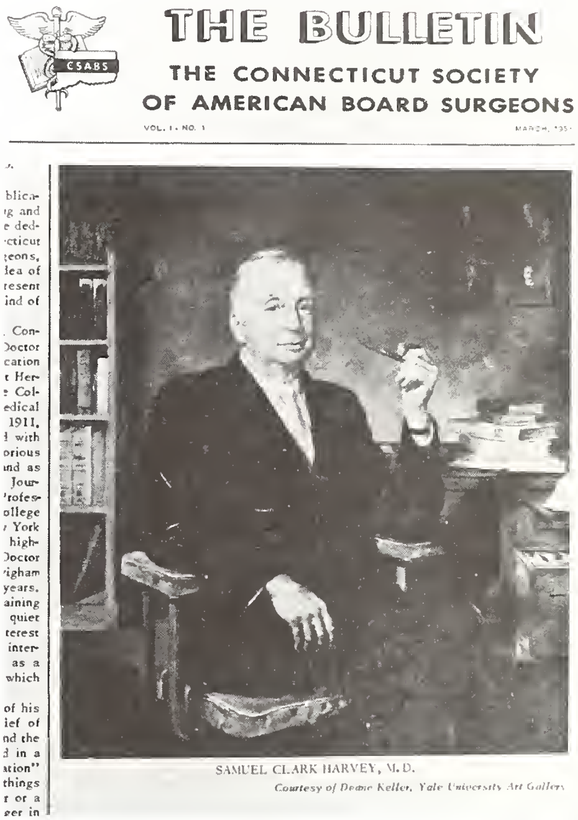
UNIVERSITY OF MARYLAND

# The Legacy of Connecticut Surgery: Case Histories Revisited

ROBERT J. TOULOUKIAN, M.D.

This is an especially important occasion for me, as your President, and to the Connecticut Society of American Board Surgeons which today marks its 32nd birthday, an appropriate moment to see where we are, and look where we have been.

The Society owes its existence to Dr. Samuel C. Harvey of New Haven who conceived the idea, subsequent to the founding of the American Board of Surgery on January 9, 1937. Dr. Courtney Bishop's review of the history of our Society published in Volume 1, No. 1, of the Bulletin of the CSABS in 1958, provides us with a photograph of Dr. Harvey and a recounting of the early days of the Board surgeons (Figure 1). Dr. Harvey, at that time Carmalt Professor of Surgery at Yale and Vice Chairman of the American Board of Surgery from 1947 to 1949, saw in the young, well-trained and well-educated Diplomates of the American Board in Connecticut a nucleus for an effective organization of those men who ultimately should be the professional leaders in the state. In the early months of 1947, a group consisting of Dr. Harvey, Donald Wells of Hartford, Mason Eddy of Bridgeport, Edward Ottenheimer of Willimantic and Francis Sutherland of Torrington met and agreed to the major objectives of a new organization devoted to "extended social friendship among its members" and the "improvement of surgery in Connecticut." An organizational meeting of the new group was expanded by invitation to a total of 20 surgeons from eight Connecticut towns, and met on December 11, 1947 at Mory's in New Haven. All agreed that the new society should indicate its objective and be named the "Connecticut Society of American Board Surgeons." The first formal meeting of the new Society was held in the Hunt Memorial Building in Hartford on Thursday afternoon, September 23, 1948, with 49 of the 76 eligible surgeons present. Following the Business Meeting, the Society heard an address by Dr. Allen O. Whipple of New York who traced the life of William Stewart Halsted as a surgeon, the establishment of the full-time program at Hopkins, the evolution of the resident training system, and the founding of the American Board of Surgery. The promise expressed so clearly in that meeting and the potential for growth were prophetic. The membership of the Board Sur-



THE BULLETIN
THE CONNECTICUT SOCIETY
OF AMERICAN BOARD SURGEONS
VOL. 1 - NO. 1
MARCH, 195

SAMUEL CLARK HARVEY, M.D.
*Courtesy of Deane Keller, Yale University Art Gallery*

Figure 1
Volume 1, No. 1 of the Bulletin of the Connecticut Society of American Board Surgeons is illustrated by a photograph of Dr. Samuel C. Harvey credited with the idea of forming the current Association.

---

ROBERT J. TOULOUKIAN, M.D., Professor of Surgery and Pediatrics, Yale University School of Medicine; Chief Pediatric Surgery, Yale New Haven Hospital.

*Presented as Presidential Address at the annual meeting of the Connecticut Society of American Board Surgeons, Farmington, December 3, 1980.*

geons nearly tripled during the first twelve years, and has continued to rise, albeit more slowly, to a total of 358 members in 35 hospitals by 1979. Today we proudly induct 14 new members. There has been a gradual but perceptible increase in the number of so-called "senior" members, who at the age of 55 years, remain far too young to be considered retired from holding organizational leadership postitions (Figure 2). We are preparing an amendment to our Bylaws to draw from the resources of this group for elected positions in the future. As important as the growth expressed in the number of members is the singular direction of the Society monitoring its joint goals of sociability with scientific presentations, its association during the past several years with the Chapter of the American College of Surgeons, and culminating today, as it did two years ago at Yale, at having this meeting hosted by an institution where excellent training leading to certification in general surgery is provided. Perhaps future Presidents will agree and wish whenever possible to have this tradition continue.

UNIVERSITY OF MARYLAND

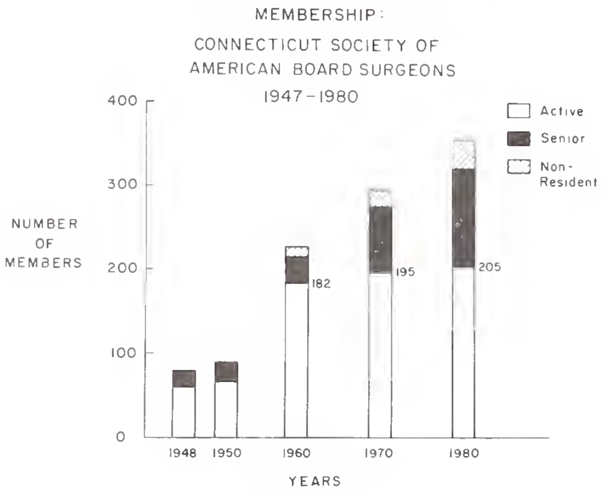
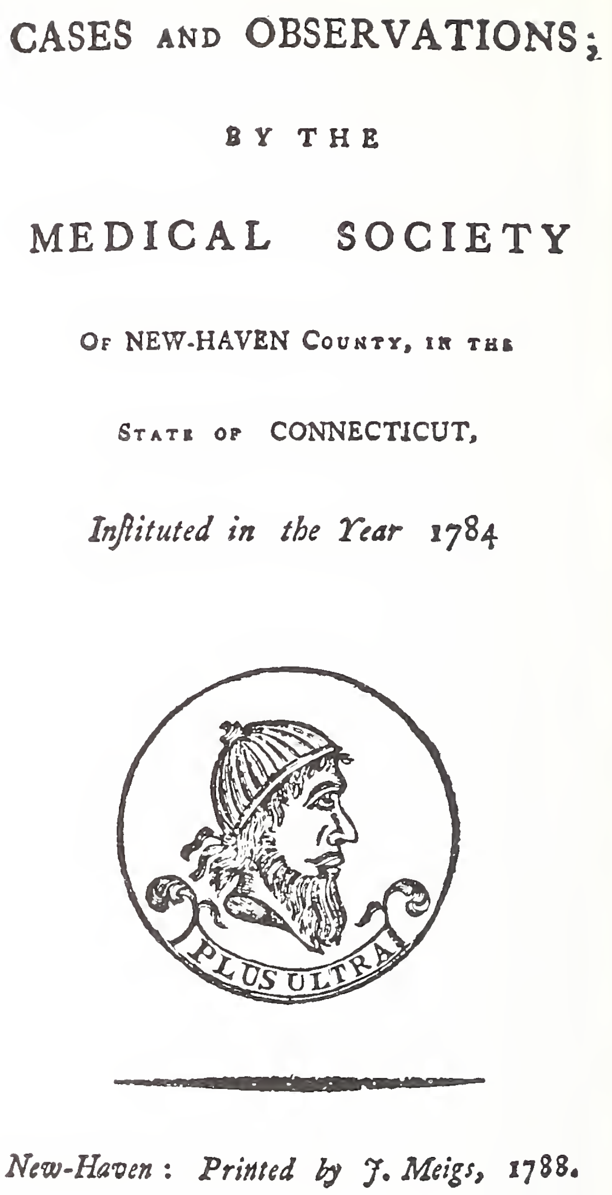


Figure 2
Growing membership in the CSABS.

The association of Board-certified surgeons in a state-wide Society was a nation-wide "first" in which Connecticut can be justifiably proud. Perhaps less well known is that the Medical Society of New Haven, founded in 1784, and soon thereafter to become the State Medical Society of Connecticut by 1792, is credited with publishing the first volume of medical transactions issued in this country. Close examination of this work is quite exciting, for in essence the majority of the cases reported have a special interest for surgeons. Apparently, the decision to proceed with the preparation of the pamphlet was made on January 2, 1788, by members of the New Haven Medical Society. One cannot be certain that the decision coming on that particular day was a New Year's Resolution, or an extended loss of sobriety lending itself to high aspiration. Nonetheless, a pamphlet "collecting the most interesting cases that have been communicated to the Society" was published in octavo form, and contains a preface of three pages, a table of contents, and 26 cases and observations.[1] The little book was printed by Mr. Joseph Meigs of New Haven. Most of the copies were distributed in single numbers, and as many as 500 may have been in existence. Three original copies currently remain in the Yale Medical Historical Library, and a reproduction can be found in the Yale Journal of Biology and Medicine.[2]


CASES and OBSERVATIONS;

BY THE

MEDICAL SOCIETY

Of NEW-HAVEN County, in the

State of CONNECTICUT,

*Inſtituted in the Year 1784*

*New-Haven: Printed by J. Meigs, 1788.*

Figure 3
Title page from the first known published transactions of a medical society in the United States.

On the title page there is the form of a male head in profile: the cranium is adorned with what appears to be a fluted cap tied behind with a ribbon, but which undoubtedly is formalized hair, the strings being the end of the fillet which the ancients so often wore. The motto "plus Ultra" is of royal usage, and it is not clear why it was selected in this case (Figure 3). Conceivably, the Greek God image was indicative of the wisdom and philosophy contained within those pages.

Reading the preface gives further indication of the laudable ambitions of the so-called "infant institution," and are worth rereading.

> "All attempts to improve a science which is subservient to the dearest interests of humanity must meet the approbation of every benevolent mind. Attempts of this nature are particularly useful as an infant empire, where the seeds of science, though widely disseminated are just beginning to germinate. Their future growth and increase depend on the care and attention with which they are nurtured. To excite others to this laudable and solitary worth, is one principal object of this publication."

Reminding those present at our meeting today of the continued importance of presentation at our Society and publication of noteworthy collected case material in *Connecticut Medicine* continues to be essential to the future growth of the Board Surgeons.

Seven of the 26 articles were contributed by Dr. Samuel Nesbitt of New Haven, a Scotsman who practiced medicine for ten or twelve years before devoting the remainder of his life to the ministry. The therapeutic imprint of the 17th century philosophy of blood-letting, and purging purveyed much of his practice. In the case of Capt. Trowbridge's Black servant Polydore who suffered from "singultus from an adhesion of the liver to the diaphragm," he let blood frequently and prescribed mercurials "to be worked off with salts and manna." The patient died with continuing hiccups, and at autopsy dense adhesions of the stomach, large intestine and liver to the diaphragm were found, and felt to be the cause of the unremitting singultus. I believe this represents the first documented case of hiccups from phrenic nerve irritation published.

The third article was authored by Abraham Tomlinson of Milford and concerns two cases of foreign body of the gullet, then called the "gula," and indicate that "salted flesh," presumably pork and "beef and cabbage" formed part of the diet of the day. Needless to say, the entire process may have been hastened by an injudicious intake of a preferred English ale. Various attempts at manual extraction were attempted, in one case with a pair of long, slender, curved crane bills, all to no avail. Tomlinson succeeded in dislodging the offending substances in both instances by the simple expedient of lubricating the foreign body with oil and following the procedure with an emetic. The author concluded that "he considered the great force of the muscles employed in the action of vomiting, whereby the fluid contents of the stomach were forced through the upper orifice, into the esophagus, in a full stream, there meeting with resistance from the offending body, will expand the gula, and being urged on by the impetence of the fluid, will overcome the resistance and bear away the offending matter in the torrent of water by the mouth." The method utilizes exactly the same principles of a retrograde hydraulic force described by Heimlich in accomplishing the maneuver ascribed to him almost two centuries later.

Leverett Hubbard of New Haven was commonly known as Colonel Hubbard since he commanded the Second Regiment of Militia from 1773 to 1775, and is described as prompt, bold, efficient, prepossessing and cheerful. One of his cases, Article V, is that of a 40-year-old man with gangrene of the scrotum. Apparently the patient had intolerable pain of the left groin for which a plaster was applied formed of the oily dirt which swine leave on fences after rubbing. The reader is led to believe that the plaster was applied on the advice of his wife, who in turn had the recipe from a lady friend. In lieu of the consequences, one can only conclude that this might have been a very effective collaboration of "wronged" women. The patient developed an extensive gangrene of the perineum, penis, and scrotum. Hubbard made multiple incisions and excised much of the necrotic tissue, during which process the testicles and prostate were exposed. The testes became adherent to one another and in Hubbard's words they resembled "a twin peach or apple." Nonetheless, the patient did survive. Hubbard's contribution may be among the earliest descriptions of a necrotizing clostridial infection, properly treated by extensive debridement.

There were numerous contributions of particular interest to me as a pediatric surgeon. The first of these was by Ebenezer Beardsley, originally of Bridgeport, who practiced first in Waterbury, served three years as a surgeon's mate in the Revolutionary War and moved to New Haven in 1779. Beardsley reported on a five-year-old boy he described as having enteritis, possibly from worms, but was subsequently shown at autopsy to have an intussusception. Beardsley concluded that premature judgement is "certainly unbecoming a philosopher and physician," advice which certainly implies the continuing importance of exercising surgical judgement in our own practice. Article IX is the case of a "deformed fetus with a cut," probably having a sacrococcygeal teratoma. Colonel Hubbard illustrated his case with the only engraving in the booklet, a newborn with a mass having the appearance of a distorted second face and several apertures, one of which is described as an esophageal opening (Figure 4).

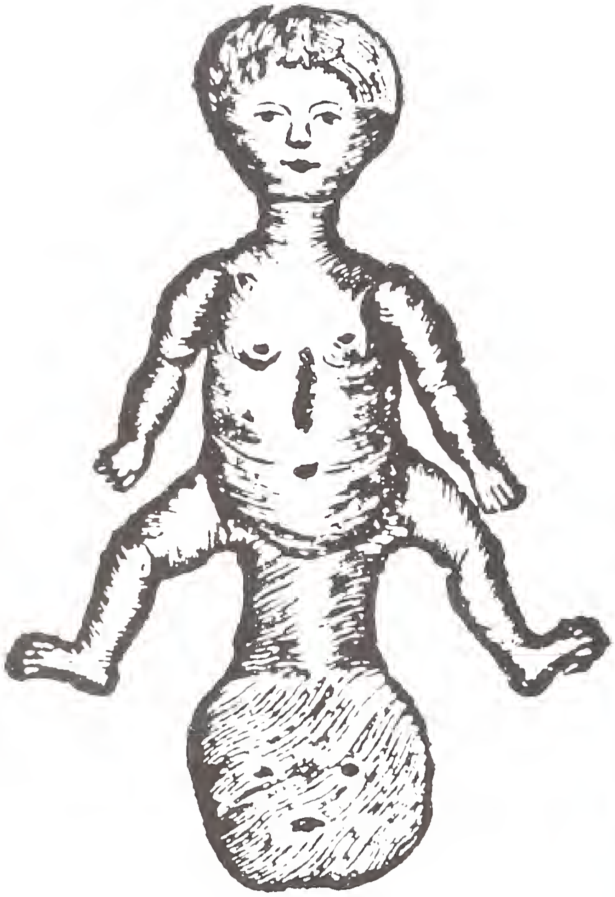


Figure 4
Illustration for Leverett Hubbard's case of a "deformed fetus with a cut," showing a sacro-coccygeal teratoma in a newborn.

Other cases could be presented but I close with one more, having important historical implications. This is the case described by Hezekiah Beardsley, Ebenezer's brother, who was born in Stratford in 1784, practiced in Southington and Hartford, and moved to New Haven in 1782. A painting of Beardsley by an unknown artist is typical of Connecticut portraiture of the last part of the eighteenth century, and is a good example of the American Primitive School. The painting is believed to have been completed just prior to Beardsley's death from pulmonary consumption at the age of 42 years and currently hangs in the Yale Art Gallery (Figure 5). His case, entitled "a scirrhus in the pylorus of an infant," previously read to the Medical Society of New Haven on April 2, 1788, describes the history of a five-year-old boy with vomitting of almost everything he ate since infancy, and chronic inanition before death. The stomach at autopsy was described as "unusually large, having the thickness of a hog's bladder, and distended with air and a wine pint of a clear fluid." The pylorus was "invested with a hard compact substance, or schirrosity, which so completely obstructed the passage into the duodenum, as to admit with the greatest difficulty, the finest fluid." Beardsley adds, "that in justice to myself, I ought to mention, that I had pronounced a schirrosity in that part for months before the child's death." Beardsley's name and fame will remain alive because of this accurate first description of "hypertrophic pyloric stenosis" in America although it does not appear to have contributed to subsequent observations and treatment of the condition by pyloromyotomy. Parenthetically, the case also provides further evidence that survival with "medical" treatment alone is possible but vomiting will continue and the hypertrophied pylorus will not necessarily involute.

Figure 5
Painting of Hezekiah Beardsley (1842-1890). Yale Art Gallery.

The principal importance of Beardsley's observation and the astuteness of the other physicians, apparent by careful reading of their cases, reveals the high level of medical practice in Connecticut in the last half of the eighteenth century. I hope my message today is clear. As Connecticut's surgeons, you have a proud legacy. Enjoy it, respect it, but do not rest on its past achievement. My thanks and appreciation to you all for having asked me to serve as your President.

## REFERENCES

1. "Cases and Observations by the Medical Society of New Haven." Printed by J. Meigs, 1788.
2. New Haven County Medical Association, Sesquicentennial number, Yale Journal of Biology and Medicine 6:213, 1934

UNIVERSITY OF MARYLAND

# The Hospital Trustee and Quality Assurance

JOHN Q. TILSON, ESQ.

It has been 15 years since the Supreme Court of Illinois shocked the American hospital community by its decision in the now famous case of *Darling* v. *Charleston Community Hospital.*[1] Young Darling was injured playing football and brought to the defendant hospital where he was seen and admitted by the physician who was then on call for the emergency room. There followed a period of alleged severe neglect, as a result of which Darling's leg required eventual amputation. The court, in holding the hospital as well as the physician liable for malpractice, held that a hospital can no longer take a passive role relying upon the judgment of attending physicians on its staff. The significance of the Darling case was that for the first time it placed on the hospital as an institution responsibility for taking appropriate steps to assure adequate patient care.

The Darling case has been followed by a number of decisions in various jurisdictions which have extended the doctrine of corporate responsibility for quality assurance. For example, in the case of *Corleto* v. *Shore Memorial Hospital*[2] the patient sued his attending physician, the hospital administrator and members of the Board of Directors and medical staff, alleging negligence on the part of the attending physician and further alleging that the other defendants knew or should have known of the physician's incompetence. The court held that the hospital as an institution had a duty to provide appropriate medical care and that the various defendants could be held responsible if they in fact knew of the physician's incompetence.

In the much publicized case of *Gonzales* v. *Nork*[3] the jury found that the defendant physician performed unnecessary laminectomies which he was not competent to perform and which he performed badly. The hospital was held liable despite full compliance with Joint Commisssion on Accreditation rules and despite no actual knowledge of the physician's faults until a malpractice action had been commenced. The defendant physician had apparently had a string of disasters which the court found should have alerted the hospital to the possibility of negligence. The court held that the hospital should have had appropriate machinery to monitor patient care and that had it had such machinery in place, the disastrous conduct of the defendant physician could have been avoided.

In *Mitchell County Hospital Authority* v. *Joiner*[4] the plaintiff alleged that the hospital had failed to exercise due care in admitting an emergency room physician to the hospital staff. The court pointed out that the hospital cannot successfully claim that it delegated control of medical staff privileges to the medical staff. It had an independent obligation to make sure that the medical staff procedure for the granting of privileges was appropriate.

Despite the general principles laid down in these cases, there are no clear cut rules as to how members of a hospital governing board are expected to fulfill their obligations with respect to quality assurance. Obviously responsibility, at least in part, must be delegated to the medical staff and its appropriate committees, since it is unlikely that members of the board of trustees will have personal knowledge of the competence or lack of competence of individual members of the medical staff. Board members must, however, take proper steps to make sure that the institution has in place machinery which can effectively monitor the care being given by physicians practicing within the hospital.[5]

Fortunately for hospital trustees, there are apparently no reported cases in which individual members of the board have been held personally liable for negligent acts of physicians on the hospital staff. This should not in any way lessen the determination of a hospital trustee to assume responsibility for the quality of care administered in the hospital. In the final analysis this responsibility clearly rests on the trustees and cannot be delegated either to the administration or to the medical staff.

---

JOHN Q. TILSON, ESQ. Legal Counsel to the Connecticut Hospital Association; partner of Wiggin & Dana, 195 Church Street, New Haven, CT 06510.

A graduate of Yale University, from which he received both his undergraduate and law degrees, Mr. Tilson is a former president of the Connecticut Bar Association and is currently a lecturer in hospital law in the Yale School of Medicine's Department of Epidemiology and Public Health.

## REFERENCES

1. Volume 33, *Illinois Reports,* 2nd Series; Volume 211, *North East Reports,* 2nd Series, P. 253
2. Volume 138, *New Jersey Superior Court,* P. 302; Volume 350, *Atlantic Reports,* 2nd Series, P. 534
3. Trial Court Decision Reversed on Procedural Grounds, Volume 131, *California Reporter,* P. 717
4. Volume 229, *Georgia Reports,* P. 140; Volume 189, *South East Reports,* 2nd Series, P. 412
5. See *Johnson* v. *Misericordia Hospital,* Volume 294, *North West Reports,* 2nd Series, P. 501, where a $405,000 verdict against the hospital was upheld because the hospital did not check references of a surgeon applying for staff privileges

Kaoud Brothers

NOW LEASING

THE FINE ART OF

Oriental Rugs

**A unique new way to invest in and enjoy Oriental Rugs through leasing**

- Enhance your office decor with fine art and write it off as a business expense.
- There is no cash investment required. Low monthly payment.
- Enjoy the beauty of oriental rugs while your investment grows.
- Capitalize on the high rate of appreciation of your oriental rugs.
- Buy your rug later at a fraction of its original cost.
- Lease from a family-owned, well-established firm that offers the finest selection of oriental rugs in Connecticut.

For more information about leasing, please write or call West Hartford store only. Our representative will be more than happy to arrange a meeting and explain this new concept in more detail.

For your other carpet needs, visit any one of our three convenient locations.

Kaoud Brothers

17 S. Main St.
West Hartford
233-6211

334 Boston Post Rd.
Orange, Conn.
795-5264

37 Danbury Rd.
Wilton, Conn.
762-0376

UNIVERSITY OF MARYLAND

# Swiss Guidelines on Care of the Dying

**In November 1976 the Swiss Academy of Medical Sciences issued guidelines on caring for the dying. The guidelines themselves are brief and stress the physician's duty to offer personal support and care as well as medical treatments. As for discontinuing treatment, the physician should abide by the will of the competent patient; in the case of the incompetent or unconscious patient, relatives should be consulted but "the final decision belongs to the physician," acting on what he presumes is the patient's desire.**

**Reprinted here is a translation of the accompanying Commentary on these guidelines, which repeats and elaborates the original points. The guidelines propose wide discretionary powers for the physician, under the rubric of *gestion sans mandat or Geschäftsführung ohne Auftrag,* a Swiss legal category providing for urgent interventions on behalf of someone unable to give consent. At the same time the role of the family or next-of-kin is relatively diminished. As the unilateral statement of a medical association, these guidelines have no apparent legal force; but they may well be taken into consideration by Swiss courts deciding difficult cases.**

HEALTH SCIENCES LIBRARY

## Commentary on "Guidelines Concerning Euthanasia"

Care for the dying is one of the physician's duties; it consists of aiding the patient in his last moments so that he might be able to die with dignity. Euthanasia is not only a medical problem; it is also an ethical and legal problem.

### I. Medical Considerations

The person afflicted with a deadly illness or the victim of a life-threatening accident is not necessarily a dying person. He is a person in danger of death; obviously it is necessary to strive to maintain him in life and to heal him if possible. In such cases the physician ought to use all pertinent means at his disposal. Treatment of these patients is not aid in dying but a sustenance of life.

1. Aid in dying pertains to . . . an ill or injured individual whose condition—in the judgement of the physician, reached on the basis of a constellation of clinical signs—is leading irreversibly to death in the near future. In such a case the physician can refrain from using measures that technically would still be applicable. . . .

2. Active euthanasia (or provocation of death) is distinguished from passive euthanasia. It is recognized that this distinction is not always easy in certain specific cases.

a) Active euthanasia deliberately curtails life by killing the dying individual. It consists in artificially intervening in the vital processes that still subsist, in order to hasten the coming of death. According to Swiss Penal Code active euthanasia is a punishable intentional homicide. Active euthanasia remains punishable even when done at the request of the patient.

b) Passive euthanasia is the act of allowing a fatally ill or injured person to die, by renouncing measures that would prolong his life. It consists in the omission or the discontinuation of medication, as well as of technical measures like mechanical respiration, provision of oxygen, blood transfusion, hemodialysis, and intravenous feeding.

It is medically justified to abandon a therapy or limit oneself to alleviating suffering if in deferring death one prolongs suffering beyond what is bearable and if on the other hand the affliction has taken an irreversible turn with a prognostication of death.

c) The proper course of action in the special case of certain cerebral disorders deserves detailed discussion:

*Coma vigil or akinetic mutism*

In the case of a patient long affected with a grave deficit of consciousness and lacking all communication with his surroundings, the physician, after extended observation, would decide if the process is irreversible. If so, special life-extending measures can be abandoned, even if spontaneous respiration and swallowing continue. In such cases treatment can rightfully be limited to routine care.

*Grave cerebral disorders of the newborn*

When a newborn or an infant is afflicted with grave abnormalities and perinatal injuries of the central nervous system that would lead to irreparable difficul-

---

*Reprinted with permission from* The Hastings Center Report, *Institute of Society, Ethics and the Life Sciences, Vol. 7, No. 3, June 1977.*

ties of development, and when, in addition, it cannot survive except by constant employment of exceptional technical means, it is permissible not to initiate these procedures or to interrupt their application.

### II. Ethical Considerations

The first duty of the physician is to aid his patient in every manner possible. During life this aid is aimed at maintaining and prolonging life. But with respect to the dying person, the most appropriate aid depends on a great number of factors that the physician should weigh and appreciate—a reality often confronting him with difficult decisions.

Among other things the physician must consider:

- —the patient's personality and his expressed or presumed desires;
- —the burden of his suffering and infirmity;
- —the medical interventions that are still possible;
- —the availability of therapeutic resources;
- —the attitude of his family, friends, and his social situation.

The process of dying begins when the basic vital functions of the organism are profoundly disturbed or completely failing. When the fundaments of life are impaired so that the capacity to be the author of personal actions, or to be responsible for them, that is to say, to determine one's own life, has disappeared, and when death is imminent, a great deal of discretion ought to be left to the physician. . . .

### III. Legal Considerations

Aid in dying is based on the physician's duty to do everything in his power to preserve and promote the health and life of the patient whom he has agreed to treat. This duty is termed the physician's fiduciary duty. The physician who has practiced passive euthanasia could be rendered civilly and criminally liable if he has thereby violated his fiduciary duty.

Therefore the physician ought to know of what this duty consists, on the one hand toward a patient capable of judgment and fully conscious, and on the other toward an unconscious patient.

1. The physician is bound by the will of a patient capable of judgment when the latter has been informed of his disease, of his treatment, and of the risks that he runs. The competent physician decides if he wants to be treated or not; accordingly he has the right to call a halt to treatment. In that case there is no legal basis for applying therapeutic measures that the patient no longer desires. In accordance with the patient's wish, the physician should content himself with administering painkillers or proceeding to some limited treatment, without being rendered liable. The ruling principle should be: "Let the will of the patient be the supreme law."

2. If the terminal patient is *no longer capable of judgment* and can thus no longer express his will (for example, in the case of the unconscious patient), the physician's duty is determined on the level of civil law by the rules of *gestion des affaires (Geschäftsführung ohne Auftrag).* The presumed wish of the patient should determine the therapeutic measures. This wish ought not to be interpreted simply in the sense of a prolongation of suffering. Application of medical measures can, on the contrary, be no longer indicated, out of the respect owed to the personality of the dying person. In such circumstances, the physician can invoke the legal justification of the *gestion sans mandat, gestion d'affaires,* or *Geschäftsführung ohne Auftrag.*

3. *A preexisting written declaration by the patient* renouncing all artificial prolongation of his life can be an important indicator of his wishes. But what counts is the presumed *current* wish, which can only be established by a careful evaluation of all the circumstances. Because it can be revoked at any time, the preexisting declaration does not bind the physician. One ought therefore always ask oneself if the patient, at the given moment, would or would not reasonably revoke his decision.

4. Persons close to the patient ought to be heard. (As a general rule, but not exclusively, such persons are the patient's next of kin.) But the final decision, legally, belongs to the physician. When the patient is a minor or a ward, treatment ought to be neither reduced nor suspended against the wishes of the parents or guardian.

---

### Swiss Voters Approve Mercy Killing

In what is believed to be the world's first plebiscite on euthanasia, voters in Switzerland's most populous state have approved a measure that could legalize mercy killing throughout the country. The vote, 203,148 to 144,822, pledges the Zurich state government to initiate federal legislation permitting doctors to perform euthanasia if requested by patients "suffering from an incurable, painful and definitely fatal disease." The measure was backed by a committee of jurists and psychologists who argued that "introduction of euthanasia on request . . . takes into account our modern views that every citizen should be granted a maximum of freedom and self-determination." Rolf Wyler, the 21-year-old clerk who initiated the proposal two years ago, said he believed most of the support for it came from elderly people.

*Modern Medicine, November 1977*

UNIVERSITY OF MARYLAND

# Terminal Illness

## JUDICIAL COUNCIL OF THE AMA

At the 1976 Annual convention several resolutions relating to the medical management of unconscious or incompetent patients suffering from terminal illness, were considered by the House of Delegates. In lieu of these resolutions, the House adopted the following:

> RESOLVED, That the American Medical Association reaffirm established policy that: "statutory definition of death is neither desirable or necessary;" "death shall be determined by the clinical judgment of the physician using the necessary available and currently accepted criteria;" "permanent and irreversible cessation of function of the brain constitutes one of the various criteria which can be used in the medical diagnosis of death;" "physicians may and indeed should be encouraged to discuss death and terminal illness with patients;" "the cessation of the employment of extraordinary means to prolong the life of the body when there is irrefutable evidence that [biological] death is imminent is the decision of the patient and or his immediate family;" and "the advice and judgment of the physician should be freely available to the patient and or his immediate family;" and be it further
>
> RESOLVED, That the Judicial Council be requested to review the above policy positions in light of recent legislative and judicial actions and report back to the House at the 1976 Clinical Convention with recommendations relating to the need for any changes if policy is needed to provide additional guidance to physicians and medical societies.

In its 1976 Report to the House, the Judicial Council indicated that it had extensively reviewed this policy. The Council reviewed recent court decisions, such as the case of 355 A. 2d 647 *In the Matter of Karen Quinlan,* (N.J. Sup. Ct., March 31, 1976); recent legislative activities, such as California Health and Safety Code, Natural Death Act (still the only legislation that had been enacted on euthanasia and terminal illness at the time this Report was prepared); certain hospital intensive care unit classifications, guidelines, and policies; and numerous articles and editorials on the medical, legal, professional, and personal issues involved.

The Council recommended no change in existing policy statements. Due to ongoing concern and continuing legal developments in this area, the Judicial Council also advised the House that it would continue to monitor this subject and advise the House if any change in or modification of policy should become appropriate in the future.

### The Issue

The issue is the medical management of terminally ill patients. There has been no lack of opportunity for any interested physician to speak his or her mind on this subject. AMA policy has been set and reset. The House of Delegates and the Judicial Council have agreed that current AMA policy should continue to remain in force and effect.

The only issue left to present in this report is the role of the courts or state legislatures on questions of euthanasia and terminal illness. As the Judicial Council advised the House in another report at the last AMA Convention, Judicial Council guidelines are available to judges, legislatures, government agencies, and others. Sometimes a Judicial Council guideline is directly or indirectly approved or endorsed by a court decision, a legislative proposal, or an agency ruling. The Judicial Council is pleased if its guidelines are followed or if information it supplies is helpful to public bodies. On the other hand, the Judicial Council cannot mandate acceptance of its guidelines by any public body.

In 1976, the two most highly publicized pertinent actions by public bodies on euthanasia and terminal illness occurred in New Jersey and California. The results produced by the New Jersey Supreme Court and the California State Assembly suggest that courtrooms and legislatures may not be the best places to seek answers to such questions, but this does not mean that legislatures or courts can be forbidden by the AMA from attempting to seek such answers.

---

*Report of the Judicial Council of the AMA to the House of Delegates, Annual Meeting, June, 1977.*

### The Quinlan Case

The New Jersey Supreme Court decision in the *Quinlan* case may have left more questions unanswered than answered. The facts developed and the language used in the case are far from clear. Without belaboring the House with a detailed review and critique of the court's opinion, it should be sufficient to point out that the court based its decision on the right to privacy, but conditioned that right in two unusual ways.

First, the court "suggested" that a "hospital ethics committee" review the decision of the attending physicians and the patient's guardian and family regarding the care and treatment to be provided the comatose patient. Unfortunately, the hospital in question had no such "ethics committee" at the time, there were no established criteria for any such committees, and the use of "ethics committees" in abortion cases was invalidated by the U.S. Supreme Court in 1973. Also, if such "ethics committees" should become mere rubber stamps for the decision of the attending physician or the hospital administration, it is difficult to imagine further nonintervention of the courts, which are the final arbiter of legal disputes in our society. The privacy and confidentiality of the physician-patient relationship can be invaded, as well, by such a committee, whether or not the patient or his responsible relative or legal representative desire this.

Second, the New Jersey Supreme Court spoke in terms of "cognition" and "sapience" rather than terminal illnees. As the Judicial Council pointed out in its 1973 Report to the House, the use of language in this area is extremely important. Cognition means "the act or process of knowing," while sapience means "wisdom." Limiting the right of privacy to cognitive, sapient persons would seem to be a dangerous and questionable precedent. Are the mentally retarded, for instance, something less than persons in the constitutional sense? One would hope not, but the language of the *Quinlan* decision makes this far from clear.

In light of these basic factors, including the fact that all parties involved in the Quinlan case declined to seek review of the decision by the U.S. Supreme Court, it may be noted that there is still no *established national* precedent in the country to provide definitive or specific guidelines or rules governing the institution or withholding of emergency life saving or life prolonging procedures in terminal cases. Each case must be decided on the facts and circumstances involved. The decision as to what, if any, treatment is to be recommended or instituted for an individual patient is a matter of medical judgment for which the attending physician is ultimately likely to be responsible. To accommodate the fine lines of distinction in this area, the Judicial Council prepared its prior reports. To date, present AMA policy contains the only approach and use of language that the Council finds legally and ethically consistent and sound.

UNIVERSITY OF MARYLAND

### The California Legislation

The California *Natural Death Act* is more cautious in its use of language, but still presents serious problems that may leave California physicians in as much of a quandary as New Jersey physicians. On the plus side, the California statute states that it does not "condone, authorize, or approve mercy killing."

On the minus side, however, the statute contains a patient "directive" form that can be effective for up to 5 years. This is a long period of time to cover what should be the relatively contemporaneous expression of a patient who is supposed to be near death.

The statute also contains extensive provisions on revocation or cancellation of a patient "directive" form that may well provide a fertile area for litigation against physicians in the future. It is not pleasant to imagine the legal possibilities that could arise from a "directive" form "being cancelled, defaced, or burnt, torn, or otherwise destroyed" or being revoked by "a verbal expression by the declarant," as outlined in the California law. These difficulties can arise any time a consent or authorization form does not reflect the relatively contemporaneous expression of intent of the patient or his responsible relative or legal representative. Even though the statute claims to exclude physician liability "for failure to act upon a revocation," this seems a strange notion. If a consent or authorization form is not effective, generally speaking, it should not be followed. California physicians may yet thus find themselves in an unenviable dilemma. If a physician ignores a revocation and honors a "directive" form, he could conceivably be liable for a wrongful death action. If, on the other hand, he honors the revocation and ignores the "directive" form, he could conceivably be liable for an assault and battery. Poorly drawn legislation can bring bad results.

The statute also draws a distinction between patients who execute a "directive" form at least 14 days after they are terminally ill and those who do not. In the first instance, the statute rigidly makes a physician guilty of "unprofessional conduct" if he fails to "make the necessary arrangements, or . . . to effect the transfer of the . . . patient to another physician." In the second instance, though, the statute becomes evasive and the physician need only "give weight to the directive" and may consider "other factors." These legislative provisions, too, may provide a fertile area for future litigation against physicians. Legalistic "second guessing" on the timing of a terminal illness and the weighing of "other factors" may become a popular activity under these legislative notions.

The California statute is 10 pages long and does not, apparently, even deal with the situation where the patient has not signed a "directive" form. The *Quinlan* decision is 59 pages long. Both contain more information and explanation than can be comfortably digested. Physicians in New Jersey, for instance, have had to develop 4 pages of guidelines for the practice of medicine by committee to satisfy the "suggestion" in the *Quinlan* case. Similarly, the California Medical Association, the Los Angeles County Bar Association's Committee on Bioethics, the California Hospital Association, and certain legislative representatives have had to prepare 4 pages of guidelines to explain what the California statute means. Additionally, in a letter to its membership, the California Medical Association indicated that the statute "was passed in the closing days of the legislature, and there was no opportunity to resolve several questions which were raised at the time." The California Medical Association now anticipates having to introduce additional legislation to resolve the ambiguities created by the initial legislation.

Physicians in California and New Jersey presently have to deal on a matter of great public concern with extensive regulations and rules that may be subject to modification or reversal in the near future. The AMA cannot forbid the legislative or judicial activity that brings such results, but this presentation should show that there must be a better, clearer, less complicated way to approach this issue.

### Discussion

Enough has been said in this report and in the past to cause the Judicial Council to limit its discussion here to the interests that need to be protected and to conclude this report with the Council's recommendations. It is already established AMA policy that the cessation of the employment of extraordinary means to prolong the life of the body where there is irrefutable evidence that biological death is imminent is the decision of the patient and/or his immediate family. The interest of the competent, adult patient and/or his immediate family is, therefore, already protected.

Terminally ill patients may also be minors or mentally incompetent, however. The Judicial Council would not like to see "concern" on this issue turned into a weapon against those who may have a diminished capacity to represent themselves. Accordingly, language must be developed to provide protection for these individuals through such legal representatives as guardians or conservators.

Finally, physicians and hospitals are interested in being protected from civil or criminal liability if and when there is a cessation of employment of extraordinary means to prolong the life of the patient's body when there is irrefutable evidence that biological death is imminent. Although medical policy, custom, and practice may have an effect in deciding whether there is criminal or civil liability here, such a decision ultimately rests with the courts or the legislatures.

### Recommendations

The Judicial Council thinks that the interests of competent adult patients, minors, the mentally incompetent, families, physicians, and hospitals can all be served by a restatement of current AMA policy. Although the AMA cannot prevent courts or legislatures from considering issues of euthanasia or terminal illness, recent experience indicates that these governmental bodies may not provide the best forums for such discussions. Even so, this cannot stop such discussions from taking place. Paragraphs (1), (2), and (3) below represent existing policy with some modification, while paragraphs (4) and (5) contain completely new language, all of which could be used directly by a court or legislature if so desired.

Accordingly, if a court or legislature is faced with this issue in the future, the Judicial Council recommends that the following statement be authorized or enacted:

(1) The intentional termination of the life of one human being by another—mercy killing or euthanasia—is contrary to public policy, medical tradition, and the most fundamental measures of human value and worth.

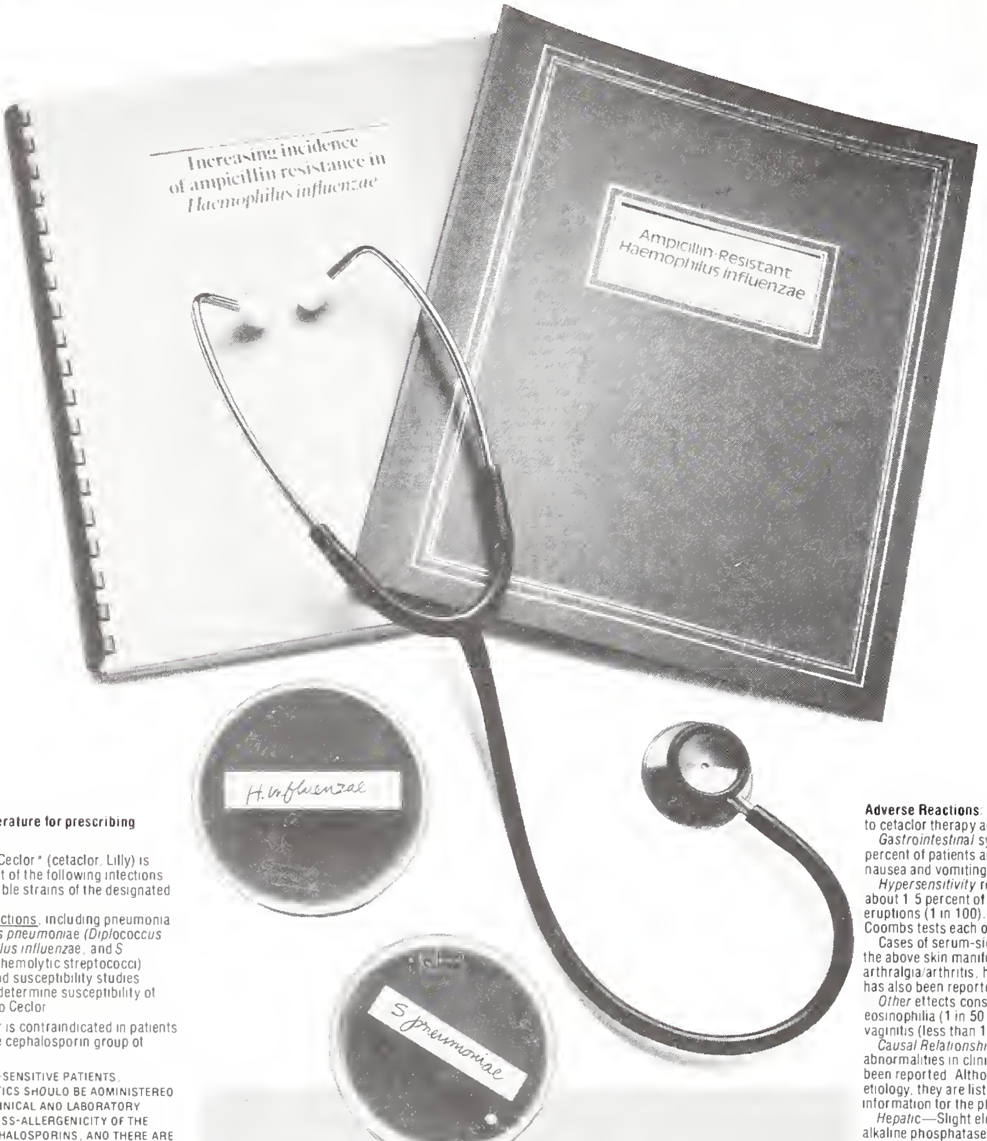
(2) The cessation of the employment of extraordinary means to prolong the life of the body when there is irrefutable evidence that biological death is imminent is the decision of the patient and/or his immediate family and/or his lawful representative, acting in the patient's best interest.

(3) The advice and judgement of the physician or physicians involved should be readily available to the patient or his immediate family and/or his lawful representative in all such situtations.

(4) No physician, other licensed health care providers, or hospital should be civilly or criminally liable for taking any action pursuant to these guidelines, nor should there be any criminal or civil penalties of any sort imposed for conduct pursuant to these guidelines.

(5) Except as stated above, all matters not in the public domain relating to a patient's terminal illness are the private right of the patient and are protected from public scrutiny by the privacy and confidentiality of the physician-patient relationship.

# An added complication... in the treatment of bacterial bronchitis*


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

**Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

**Ceclor®**
**cefaclor**

Pulvules®, 250 and 500 mg

**Brief Summary.**
**Consult the package literature for prescribing information.**

**Indications and Usage:** Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms.

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

**Contraindication:** Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

**Precautions:** If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e g, pressor amines, antihistamines, or corticosteroids

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

*Usage in Pregnancy*—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus

*Usage in Infancy*—Safety of this product for use in infants less than one month of age has not been established

**Adverse Reactions:** Adverse effects considered related to cefaclor therapy are uncommon and are listed below:

*Gastrointestinal* symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70) and nausea and vomiting (1 in 90).

*Hypersensitivity* reactions have been reported in about 1 5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occur in less than 1 in 200 patients

Cases of serum-sickness-like reactions, including the above skin manifestations, fever, and arthralgia/arthritis, have been reported. Anaphylaxis has also been reported.

*Other* effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

*Causal Relationship Uncertain*—Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

*Hepatic*—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40)

*Hematopoietic*—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

*Renal*—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [103080R]

---

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae* [8]

*Note:* Ceclor® (cefaclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

**References**

1 Antimicrob Agents Chemother, *8*:91, 1975
2 Antimicrob Agents Chemother., *11*:470, 1977
3 Antimicrob. Agents Chemother., *13*:584, 1978.
4 Antimicrob. Agents Chemother., *12*:490, 1977
5. Current Chemotherapy (edited by W Siegenthaler and R Luthy), II: 880 Washington, D.C.: American Society for Microbiology, 1978
6 Antimicrob Agents Chemother., *13*:861, 1978.
7 Data on file, Eli Lilly and Company
8 Principles and Practice of Infectious Diseases (edited by G.L Mandell, R.G. Douglas, Jr., and J.E Bennett), p 487. New York: John Wiley & Sons, 1979.

Lilly

100061

*Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.*

**Eli Lilly Industries, Inc.**
Carolina, Puerto Rico 00630

UNIVERSITY OF MARYLAND

# Patient's Right to Die in Dignity

### Background Statement

The availability of medical technology does not eliminate the need for human choices regarding its use. This is especially true when a patient is irreversibly ill. The decision to cease employment of artificial means of heroic measures to prolong life of the body belongs to the patient and/or immediate family with the approval of the family physician. Such a decision is always in some respects unique, even for the determination of what constitutes "heroic measures," or "extraordinary means," is relative to the available medical resources, the condition of the patient, and the consequences of the treatment for both the patient and other affected persons. In order that the rights of patients may be respected even after they are no longer able to participate actively in decisions about themselves, they may choose to indicate their wishes regarding refusal of treatment in a written statement. To implement that purpose, therefore be it

*Resolved,* That the House of Delegates of the American Medical Association approve the use of the following statement regarding the "patient's right to die in dignity":

> TO MY FAMILY, MY PHYSICIAN
> MY CLERGYMAN, MY LAWYER—
>
> If the time comes when I can no longer actively take part in decisions for my own future, I wish this statement to stand as the testament of my wishes.
>
> If there is no reasonable expectation of my recovery from physical or mental and spiritual disability, I, ______________________
> request that I be allowed to die and not kept alive by artificial means or heroic measures. I ask also that drugs be mercifully administered to me for terminal suffering even if in relieving pain they may hasten the moment of death. I value life and the dignity of life, so that I am not asking that my life be directly taken, but that my dying not be unreasonably prolonged nor the dignity of life be destroyed.
>
> This request is made, after careful reflection, while I am in good health and spirits. Although this document is not legally binding, you who care for me will, I hope, feel morally bound to take it into account. I recognize that it places a heavy burden of responsibility upon you, and it is with the intention of sharing this responsibility that this statement is made.
>
> Signed ______________________
> Date ______________________
> Witnessed by:
> ______________________
> ______________________

and be it further

*Resolved,* That the House of Delegates stipulate that this form is designed only to provide a mechanism whereby patients may express themselves concerning their wish to "die in dignity" and to aid others in their efforts to care for patients. The availability of this authorization form should be considered only as an *opportunity* for those who wish to use it; individuals should not be urged to sign it.

---

*Resolution adopted at the AMA Annual Meeting 1973 in response to a Connecticut resolution.*

# OTA Finds Cost-Benefit Analysis Inadequate

ORVAN W. HESS, M.D.

UNIVERSITY OF MARYLAND

The Congressional Office of Technology Assessment (OTA) has recently published a summary of its study of "The Implications of Cost-Effectiveness Analysis of Medical Technology." This report represents a response to a request by the Senate Committee on Labor and Human Resources Subcommittee on Health for an evaluation of the "feasibility, past and present usefulness of cost-benefit analysis (CBA) and cost-effectiveness analysis (CEA) in health care, and implications of expanded use of these techniques."

Progress in bio-medical research and technological innovations during the past two decades has resulted in a rapid expansion of the role of science and technology in medicine. Despite the notable improvement in medical care made possible by new tools which have been devised, there is criticism that their use has contributed to the escalation of the costs. A function of the Office of Technology Assessment is to conduct analyses of the relative costs and benefits of the application of various technologies. Information obtained in that manner could be used by congressional authorities in the allocation of financial resources. The method of analysis employed by them for this purpose seemed to have limitations and has been subjected to review. This method is not be be confused with that of the Consensus Development Program of the National Center for Health Care Technology (NIH). Under that system, technical development conferences are convened to assess the subject broadly while emphasizing the degree of safety and efficacy of selected technologies (OMAR).

Perhaps due to existing unfavorable economic conditions in an era when there has been a simultaneous increase in outlay of Federal funds for health care, the focus of evaluations of the use of a technology is being directed more intensely on costs than on weighing the derived benefits in the traditional sense. Technology, as defined in their studies, is interpreted to apply to the development and use of drugs, devices and medical or surgical procedures either emerging or employed in practice for some time. These are further categorized as diagnostic, therapeutic or "half-way" (as renal dialysis as a means of maintaining life rather than for cure of a disease).

CBA and CEA are only two examples found among the litany of confusing acronyms (CON, HSA, HCFA, SHPDA, FDA, PSRO) referring to numerous agencies or programs which have been initiated by the Government in its attempts to control health care costs. This action has been motivated in part by the burgeoning expenditures of Medicaid and Medicare for which the Federal Government must assume responsibility.

Cost-benefit analysis (CBA) is a technique devised by economists to measure "worth" of a facility, equipment or technology for the delivery of medical care in terms of dollars or "net cost" per unit of outcome such as mortality rate. Cost-benefit ratios established in that way could provide information which decision-makers may apply in comparing alternative methods of treatment in their determination of health policy. It could also furnish a criterion which regulatory agencies and third-party payers might utilize as a means of limiting, or possibly denying, reimbursement and thus influence the use of a medical technology.

Members of the medical profession, having a broader concept of the value of their services to humanity and emphasizing the need to maintain high quality of care, believe that other health-related effects—measured in non-monetary terms—should be considered in evaluating the "worth" of a specific technology. They questioned the adequacy of current methodology of CBA for this purpose. They asked whether objectives tempered by compassion, such as relief from suffering, freedom from the fear of disease, avoidance of crippling chronic illness or lessening anxiety from loss of income, are not also important. To what extent should consideration be given to legal, ethical, moral and social implications in the decision-making process? Cost-effectiveness analysis (CEA), attempting to measure cost of a technology to attain a

---

ORVAN W. HESS, M.D., is a CSMS Delegate to the American Medical Association, and Chairman of the Society's Ad Hoc Committee on Health Systems Agencies.

health-related outcome (i.e., added years of life) does not fully address these questions.

It is with considerable relief to the medical profession, anguishing over the possibility that decisions to discontinue life-supporting technology could hinge on CBA, that the Office of Technology Assessment, following its study of the implications of cost-benefit analysis and cost-effectiveness analysis, conclude that *"CEA/CBA cannot serve as the sole or primary determinant of a health care decision."* Moreover, their report states that *"CEA/CBA, in itself, would not be an effective tool for reducing or controlling overall expenditures for medical care."* These conclusions are of great importance since they can influence technological progress and the conduct of the practice of medicine. They have become even more significant as HSAs exercise Appropriateness Review authority over approval or disapproval of existing equipment or modes of diagnosis and therapy.

In their current study of implications and potential uses of CEA/CBA in relation to health care programs, OTA explored Blue Cross/Blue Shield and Medicare reimbursement, PSRO, Health Planning Agencies and HMOs. Deficiencies were found in Blue Cross/Blue Shield. In their opinion criteria used in deciding coverage did not include consideration of stage of development of the technology or its acceptance by the community. PSRO and Health Planning Agencies (HSA and SHPDA) have been essentially "needs" oriented, and only a few have given thought to incremental costs of a changing state of the art over a period of time. HMO's, having a constrained budget based on pre-payment for services were thought to be in a favorable position to impose "cost-benefit" criteria but were found to have applied this ability only infrequently to date.

However, OTA warns that because of little experience and the paucity of reliable statistics, current findings of projected implications of CEA/CBA may be proven wrong and changes in attitude be necessary in the future. Nevertheless, the report points out, decision-making could be improved by the use of the *process* of this type of analysis "which gives structure to the problem and allows open consideration of relevant effects of a decision." For the purpose of uniformity of application of the *process,* ten principles are submitted as a "guide to the conduct, evaluation or use of CEA/CBA studies."

For Congressional consideration, OTA submitted ten policy options. These range from adoption of the perception that CEA/CBA should be completely discouraged, to approval of efforts to determine the possibility of mandating cost-effectiveness analysis of a medical technology as a criterion for reimbursement coverage by Government-funded health programs. Demonstration projects are recommended to test the feasibility of CEA/CBA. Areas specifically designated are: (1) Medicare reimbursement decisions, (2) resource allocations by health planning agencies and (3) review applications of PSROs.

Both Government and the medical profession are deeply concerned about rising costs of health care. Their concepts and methods of approach to accomplish a reduction of expenditures differ. Congressional committees continue to evaluate and entertain the employment of techniques of *mandatory control* of health care for the public sector under Government-sponsored programs. The Profession, on the other hand, following suggestions emanating from a comprehensive "Study of Costs of Medical Care" instigated by the American Medical Association, but conducted by an independent multi-disciplinary Commission, joined the American Hospital Association in a program of *Voluntary Effort* of cost-containment, particularly in the private sector, with a modicum of success.

> "This OTA assessment finds that CEA/CBA cannot serve as the sole or primary determinant of a health care decision. . . . It is unrealistic, moreover, to expect that CEA/CBA, in itself, would be an effective tool for reducing or controlling overall expenditures for medical care."

Many overlapping and to some extent interdependent elements affecting costs exist in our present system of providing health care. For this reason it seems desirable that those responsible for care involving *both* sectors continue to vigorously pursue investigation of any reasonable avenue which offers promise for improved efficiency of the system, but without sacrifice of quality. The effort to reduce overall expenditures might be found to be more profitable if those dealing with technology assessment follow a "line-item" analysis in search of basic factors influencing the costs of a technology rather than to focus on "dollars" expended for its use in the clinical setting alone. Excessive costs resulting from over-regulation of research and development, requirements of extensive clinical trials by FDA, and technical burdens placed on industry before a product can be made accessible for clinical applications, may be found to play a major role. To achieve maximum containment of costs may require cooperative participation of government, the medical profession, hospital administrators and industry. Caution should be taken to avoid government actions which defeat the economic advantages of allowing forces existing in a "free-market" system to operate.

## REFERENCES

1. The Implications of Cost-effectiveness Analysis of Medical Technology, Publication of Office of Technology Assessment, Congress of the United States, August 1980
2. Report of National Commission on the Cost of Medical Care. Publication of the American Medical Association, 1978

## CSMS Policy on Cost-Benefit and Medical Care

Pursuant to the Council's Charge, the Judicial Committee has studied the matter of applying cost-benefit ratio in the delivery of medical care to patients, and has found the application of such theory inconsistent with the obligations of the physician-patient relationship and with the ideals of the medical profession.

The Society has exercised sound leadership through its past cost seminars in seeking to eliminate costs incurred through unnecessary, unindicated, or ineffective procedures. A frequent finding of these studies has been that the best quality diagnosis and treatment is also the most cost effective. However, cost-benefit theory injects into each medical judgment a cost-benefit factor involving an estimation of the patient's dollar value to society by reason of age, sex, family status, handicaps, or social status. No one would tolerate systematically unequal treatment of this sort in any other sector of society, and it is even more repugnant in a medical context involving life, quality of life, and death.

Therefore, the Judicial Committee recommends the following policy statement to the Council:

### *Cost-Benefit and Medical Care*

*The Judicial Committee of the CSMS expects that physicians will continue to be dedicated to providing the most appropriate treatment to patients, regardless of age, race, social or economic status, or their purported "value to society."*

*The medical profession will continue to resist any system which places cost considerations before the patient's own best interest.*

*It is expected that each physician will seek for each and every patient under his or her care the very best possible modality of diagnosis and/or treatment within that physician's power to provide, consonant with the state of the art and with the medical indications as understood at the moment.*

(This policy statement was adopted by the CSMS House of Delegates on April 30, 1980.)

UNIVERSITY OF MARYLAND

## Cost-Benefits of CT Scanning

*Excerpted from Report F (I-80) of the AMA Council on Scientific Affairs*

In December 1977 Arthur D. Little, Inc., did a study on "Comparative Cost Analysis: Computed Tomography Versus Alternative Diagnostic Procedures, 1977-1980," which was supported by Technicare Corporation. This study concluded that "there is little if any added net cost" from the use of computed tomography in 1977 or 1980. "Furthermore, CT has the potential to reduce net costs provided that the optimal number of units can be made available to physicians and patients to achieve projected reductions in alternative procedures." The national cost of diagnosing cranial disorders in 1977, if CT had not been available, was estimated to be $1.14 billion. In fact, 1.125 million CT procedures were actually conducted in that year. Still, the total cost of all cranial diagnoses (including the cost of CT procedures) was estimated to be only $1.17 billion, because of the numbers of costly procedures precluded by the availability of CT. This differential ignored the increase in diagnostic accuracy, ease of diagnosis, patient comfort and diminished risk of mortality and morbidity which CT scanning allowed. Projections made for 1980 suggested no further increase in cost of cranial diagnosis.

In something less than ten years CT scanning services have come to be accepted by physicians as an integral part of the diagnostic services of a fully equipped general hospital. There is increasing recognition of the savings in time, effort and pain, as well as cost, that is possible with this medically precise noninvasive diagnostic instrument.

*In view of the above, the AMA adopted the following statement at the interim meeting of its House of Delegates in December, 1980:*

"When properly utilized and correctly supervised, CT scanners for both head and body have a positive impact upon the quality of medical care. Through reduction or elimination of more hazardous diagnostic studies and avoidance of some operative procedures, CT scanning contributes positively to cost containment. Earlier and more precise diagnosis will provide opportunities to modify therapeutic approaches which may be expected to improve the outcome and/or the quality of life. Access to this technology must therefore be assured to all patients who may be expected to benefit from CT scanning."

# Month in Washington

## Reagan's Health Program: A Summary

Some $4 billion of the Reagan Administration's proposed $41 billion budget cuts will be sliced from health programs under the domain of the Department of Health and Human Services (HHS). And additional cuts in all sectors will be listed in the President's full revision of the budget for the fiscal year beginning this October—fiscal year 1982.

The cuts for health from previously projected spending levels featured $2.7 billion in savings through consolidation of HHS categorical grant programs and a 25 percent rollback in the total federal contribution. A cap on federal payments for the Medicaid program would trim the U.S. budget by $1.2 billion.

Other proposed HHS cuts included: health planning, $100 million; Professional Standards Review Organizations (PSROs), $15 million; National Institutes of Health (NIH), $197 million; Health Professions Education, $280 million; Health Maintenance Organizations (HMOs), $24 million; Public Health Service hospitals, $110 million; National Health Service Corps (NHSC) scholarships, $31 million.

All told, HHS budget authority would be reduced by $5.2 billion and outlays by $6.9 billion in fiscal 1982. More than $1 billion of this represents slashes in welfare spending. For the current fiscal year that ends in October, these health programs would be trimmed by $828 million.

The Administration's block grant proposal covers a wide span of health activities, including such programs as community health centers, migrant clinics, emergency medical services, alcohol and drug abuse services, health incentive grants, venereal disease, immunizations, etc. About 40 categorical grants for health and social services currently budgeted for $9.4 billion next fiscal year are involved.

Explaining the plan to consolidate these programs, the Administration said "day to day management has developed into a bureaucratic morass of planning, regulating, and reporting at the federal, state and local levels."

A block grant approach would give the states greater flexibility and responsibility. "States could select the service delivery agency best able to provide certain services that are now provided by direct federal grantees, the budget document said. "The overall result would strengthen state governments and provide publicly-financed services more effectively and at lower costs to those in need."

Legislation to carry out the plan will be sent to Congress with an effective date as of Oct. 1. The proposed funding level for fiscal 1982 is 75 percent of the previously-budgeted estimate, or $6.8 billion, a cut of $2.7 billion. Because of "significant savings in program overhead and more efficient service delivery due to the elimination of overlapping service responsibilities, this funding change need not result in a reduction of services," the Administration said.

Hinting at a future broad health plan proposal, presumably along the lines of "pro-competition" health bills, the economic report said government regulatory efforts to date "have failed to stem the increase in costs because they fail to affect the underlying cost-increasing bias in the health care system that results from the insulation of all parties in medical care markets from the cost consequences of their decisions. The Administration will propose comprehensive legislation to remedy these market distortions."

As an interim measure, the Administration said it will propose legislation to "establish a limit on the Medicaid program's unconstrained growth."

"High federal matching, excessive benefit provisions and overly-generous eligibility have made the Medicaid program a very poorly managed social program that fails to provide cost-effective services to those most in need," the Administration said. Eligibility errors alone are estimated to cost about $1.2 billion a year.

The federal payment limit would be structured to cut federal expenditures $100 million below the current base estimate and would be allowed to increase only five percent in fiscal 1982, rising thereafter with the overall rate of inflation. Federal spending would be reduced by $1.2 billion next year, rising to $5 billion in 1986. The Administration said it believes "this degree of restraint can be achieved by states without reducing basic services for the most needy . . . No state, however, would be prevented from providing whatever additional services it deemed appropriate out of its own resources."

The economic report said the Administration "will propose to end large general subsidies for the training of physicians and other health professionals. Such programs are no longer necessary in light of the growing

HEALTH SCIENCES LIBRARY

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

UNIVERSITY OF MARYLAND

projected supply of most health professionals. Instead, federal programs will be directly targeted on training needs of national priority."

The Administration is asking only $120 million for health professions education next year, compared with the $400 million projected under current spending levels and the current year's budget of $368 million.

The federal grant and loan subsidy program for Health Maintenance Organizations (HMOs) would be eradicated by the Administration. "After eight years of federal support, the feasibility of HMO prepaid health care delivery has been adequately demonstrated."

Legislation will be proposed to strike present "unnecessarily restrictive requirements" for federal qualifications of HMOs, making private capital available for HMO development and "obviating the need for further subsidies." No new grants or loans will be made, but HMOs now receiving support will be allowed to complete their grant period. The program would be completely phased out by 1983.

As reported earlier, the Administration will not seek new scholarships for the National Health Service Corps program that sends medical teams to physician-shortage areas. At most, 6,000 NHSC people are needed now to cover health manpower shortage areas, the Administration said. A freeze on new scholarships still will allow the corps to swell to 9,000 members by 1990.

Students who currently have NHSC scholarships will be allowed to complete their training.

Earmarked for oblivion by the Administration is the Professional Standards Review Organization (PSRO) program "consistent with a two-year Administration timetable to develop and carry out health financing reforms that encourage competition in the health sector."

"Contracts will be renewed with only those PSROs judged most effective in controlling health care costs," and some transitional funding will be allowed through 1983 to allow competing systems of health care to contract for the services of effective PSROs.

The Administration said recent studies of the program show that PSROs raise national health care spending, rather than reduce it.

The PSRO program would be pared to an appropriation of $70 million next year, from the current $174 million, to $67 million the following year and to zero by fiscal 1984.

The controversial health planning program, as expected, was ticketed for destruction. Planning "has not proved effective in controlling costs on a national basis, and it inhibits market forces needed to strengthen competition and provide less costly services." The certificate-of-need requirement under planning calls for a "government franchise" and inhibits free market entry, "often propping up high-cost institutions behind a government-created entry barrier."

Health planning would be phased-out over two years, receiving $58 million next year and no money by fiscal 1984. Outlays in the current year are expected to reach $162 million.

The budget squeeze that would keep increased funding below the projected rate of inflation would hit the National Institutes of Health where the Administration will seek $3.7 billion next fiscal year, compared with the $3.6 billion this year. The eight Public Health Service hospitals and 29 clinics would be closed down over the next four years at an estimated savings of more than $900 million over the period. The Administration said the system "is under-used and actually aggravates health care costs in cities where the hospitals are located." All of the hospitals are located in areas with an excess supply of hospital beds, the report said.

No reduction is planned for the $45.4 billion Medicare program. Other programs escaping the economy drive are the basic retirement program of Social Security; the Veterans Administration compensation programs for service disabilities and non-service-connected disability pensioners; the school lunch and breakfast programs; the Head Start program for preschoolers; the supplemental security income fund for the blind, elderly and disabled; and the summer youth jobs program.

****

Rumbles of protest quickly built up against President Reagan's proposed health spending cuts.

The nation's governors, meeting in Washington, D.C., rejected as "not acceptable" the plan to limit federal payment to states for Medicaid costs. Utah Gov. Scott Matheson presented the White House with the governors' position that "a uniform, nationwide 5 percent cap on federal financial participation is not acceptable."

Under the plan, the states would have to come up with an additional $1 billion next fiscal year to keep Medicaid services operating at their present rate in order to make up for the federal shortfall.

HHS Secretary Richard Schweiker told the governors at their annual meeting that the federal cap is needed because Medicaid "has unfortunately been out of control."

The HHS Chief noted that the "cap" is designed as an interim measure until far-reaching changes can be made in the medical system designed to induce greater competititon. "The only way to cut the budget is to cut the budget," he said, indicating that the Administration's position is firm on the issue.

The governors adopted a resolution that they will "vigorously oppose" attempts to shift the costs of the federal budget cuts to the states. They insisted state governments must have time to adjust to the cuts and have increased flexibility in administering federal programs.

Moving against the Administration current, the governors said the federal government should take over all welfare and medicaid costs.

Only three of the 49 governors attending the conference opposed the resolution.

The Administration's economic report with its list of cuts and eliminations in health and other programs was made public when the American Health Planning Association was holding its annual meeting here. The news that planning was scheduled for elimination jolted the participants.

Said Harry Cain, AHPA Executive Director: "The proposal to phase out quickly the health planning program is likely to cost the government—and all the consumers, providers and other payers of health care—a great deal more than the $100 million it purports to save."

****

A very strong case exists for cessation of the federal health planning program, the American Medical Association has told the Congress.

Planning has become "a network of quasi-regulatory agencies more responsive to federal directives and concerns than to health and medical needs of the communities purportedly served," the AMA told the Senate Appropriations Subcommittee on Health.

In a letter to subcommittee Chairman Harrison Schmitt (R-NM), James Sammons, MD, AMA Executive Vice President, said the health planning program "has clearly done more to interfere with health care competition than to foster it." The certificate-of-need requirements "establish barriers to entry in a market for competitors and, therefore, inhibit the market from operating efficiently to allocate resources," said Dr. Sammons.

The program has had little effect in containing costs, he said. The AMA House of Delegates recently reaffirmed AMA policy calling for repeal of the Health Planning Act.

Dr. Sammons noted that the AMA is developing priniciples for voluntary health planning which can serve as a foundation for establishing priorities and purposes for local planning agencies.

****

President Reagan has nominated Edward Brandt, Jr., M.D., Vice-Chancellor for health affairs since 1977 for the University of Texas, Austin, to be HHS Assistant Secretary for Health.

Brandt, whose nomination is subject to Senate confirmation, was supported for the HHS post by the American Medical Association, for which he currently chairs its section on medical schools. Brandt would succeed Julius Richmond, M.D., who also held the post of Public Health Service (PHS) Surgeon General.

Also reported by the White House is the appointment of C. Everett Koop, M.D., Surgeon-in-Chief of Children's Hospital of Philadelphia, as HHS Deputy Assistant Secretary for Health.

An additional appointment reported by the White House is the selection of Carolyne Davis, R.N., Ph.D., to head HHS' Health Care Financing Administration. Associate Vice-President for Academic Affairs at the University of Michigan, Ann Arbor, since 1975, Davis earlier served as Dean of the University's School of Nursing from 1973 to 1975.

Accompanying the White House announcement of Dr. Brandt's appointment was the statement "—it is the President's intention to see that this position is elevated to Under Secretary in accordance with a reorganization plan that will be announced later." This has led to speculation that if Dr. Brandt moves up to Under Secretary, Dr. Koop would become Assistant Secretary, and possibly, named as Surgeon General of the Public Health Service.

****

The Administration is considering submission of a catastrophic health benefit plan to Congress later this year.

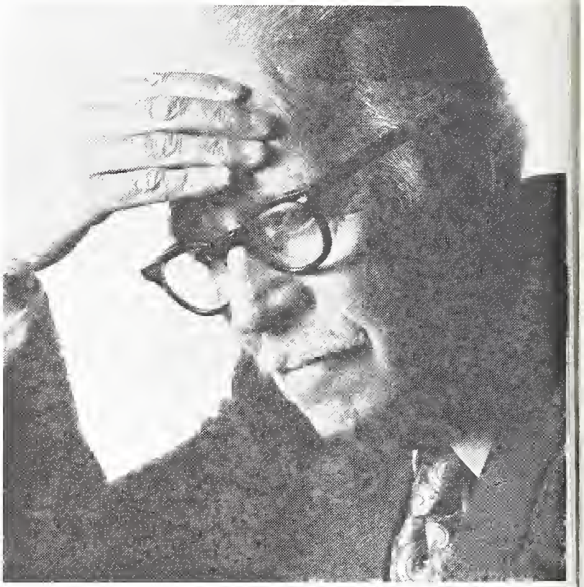
The surprise disclosure came from HHS Secretary Richard Schweiker as he opened defense of the Administration's health and welfare spending cuts in testimony before the House Ways & Means Committee.

Asked whether there was any possibility of the Administration suggesting extra benefits anywhere in light of the down-the-line cuts projected for health, Schweiker told the committee "we're looking frankly at a catastrophic health program." He said he didn't "have a feel" yet of what the final decision will be, but suggested that some money "set-aside" for catastrophic may be factored into the Administration's detailed budget.

Schweiker did not say whether a catastrophic plan would be part of the "pro-competition" health legislation the Administration has said it will propose. In his congressional appearance, Schweiker said, "I hope later this year we will present a health care delivery model to Congress."

The Administration is supporting a "consumer choice" or "pro-competition" approach under which changes in the federal tax treatment of private health insurance would be designed to spur purchase of cheaper coverage with high deductibles. Competition among insurors and HMOs theoretically would drive down the cost of medical care.

# A TOTALLY NEW DELIVERY SYSTEM TO **HELP REDUCE THE FEAR OF ANGINAL ATTACKS**



## Round-the-clock protection with

# ISO-BID

## (ISOSORBIDE DINITRATE)

## 40 mg. capsules ...twice-a-day dosage

**Controlled sustained release of ISO-BID's isosorbide dinitrate through micro-dialysis diffusion can help reduce frequency and intensity of anginal attacks. This in turn can minimize patient's fear of attacks, and dependence on nitroglycerin.**

Unlike ordinary sustained release products, ISO-BID releases isosorbide dinitrate at a smooth, continuous, predictable, controlled rate to provide for up to 12 hours of therapeutic activity. Micro-dialysis is dependent only upon the presence of fluid in the G.I. tract and not on pH or other variables. ISO-BID is particularly advantageous in the prevention of nocturnal angina.

DOSAGE: One ISO-BID capsule every 12 hours on an empty stomach according to need, for continuous 24-hour therapy. Some patients may require higher dosage levels. In these patients, dosage should be titrated, and they may require two ISO-BID capsules b.i.d. Not intended for sublingual use. Consult product brochure before prescribing.

**THERAPEUTIC FOOTNOTE:** IN TREATING ANGINA . . . FAILURES MAY RESULT FROM INADEQUATE DOSAGE Reports in the literature indicate the usefulness of higher dosage levels of isosorbide dinitrate.[1,2]

**INDICATIONS:** Based on a review of this drug by the National Academy of Sciences — National Research Council and/or other information, FDA has classified the indications as follows:

**"Possibly" effective:** For the relief of angina pectoris (pain of coronary artery disease). ISO-BID is not intended to abort the acute anginal episode, but is widely regarded as useful in the prophylactic treatment of angina pectoris. Final classification of the less-than-effective indication requires further investigation.

**CONTRAINDICATION:** Idiosyncrasy to this drug.

**WARNINGS:** Data supporting the use of nitrites during the early days of the acute phase of myocardial infarction (the period during which clinical and laboratory findings are unstable) are insufficient to establish safety.

**PRECAUTIONS:** Use with caution in patients with glaucoma. Tolerance to this drug, and cross-tolerance to other nitrates and nitrites may occur.

**ADVERSE REACTIONS:** Cutaneous vasodilation with flushing. Headache may commonly occur, and may be both severe and persistent. Transient dizziness and weakness, in addition to other signs of cerebral ischemia associated with postural hypotension may occasionally be seen. ISO-BID can act as a physiological antagonist to norepinephrine, histamine, acetylcholine and many other medications. An occasional patient may show marked sensitivity to the hypotensive effects of nitrite; severe responses (nausea, vomiting, weakness, restlessness, pallor, excessive sweating and collapse) can occur, even with the usual therapeutic dosage; alcohol may enhance this effect. A drug rash and/or exfoliative dermatitis is occasionally seen.

SAMPLES AND LITERATURE AVAILABLE.

**GERIATRIC PHARMACEUTICAL CORP.** BOX 68. FLORAL PARK, NEW YORK 11001
PIONEERS IN GERIATRIC RESEARCH
DEVELOPERS AND SUPPLIERS OF CEVI-BID • GER-O-FOAM • B-C-BID

1. Shane, S.J.: Canadian Family Physician, November 1973. 2. Lemberg, L.: Practical Cardiology, February 1976.

# The President's Page

The number one issue involving the Connecticut State Medical Society this past year has been professional liability. An immense amount of time has been devoted to investigating alternative possibilities, including captive insurance companies, and to extensive negotiation with Aetna.

Many questions have been raised concerning the time necessary for the Society to manage its own company and the ability of doctors to serve as effective board members. The success of 28 companies, serving 40% of all U.S. physicians, should allay most of these fears. The question of whether to start a captive insurance company comes down to three major items.

The first, and by far the most important, is whether such a move will reduce the frequency of compensable injuries to patients. Only by control of malpractice can the cost of professional liability be significantly reduced. Malpractice is *doctor's* business. Only physicians can properly identify the causes and reduce the poor quality of practice that leads to malpractice suits. Recognizing this, physician-owned companies have led the way in developing loss control programs based on improved care and reduction of potentially compensable occurrences. The programs in the states we have been studying are impressive. It is too early to be certain of cost savings and reduction in compensable cases. It should be noted that several physician-owned companies are reducing fees, after five years of operation, while ours are going up 60%. Motivation for loss reduction in captive companies is maximal. It means money saved for us. To the commercial company, loss reduction means less business and less income.

The second item is that of cost savings in administration and claims management. Captive insurance companies are the leaders in improved and aggressive claims management essential to the reduction of loss costs. Physicians' insurance companies also show reduction of up to 50% in management costs. Aetna's costs are about 20% of premiums, New York Mutual's are between 6% and 7%, and New Jersey's are now 9%. Commercial companies expect a 10% - 15% profit from management and reserve income. Physician-owned companies should then expect at least a 10% -15% reduction in premiums. In practice, the 28 physician-owned companies are running about 5% below the competition. All are well capitalized with adequate reserves and conservative rate structures. Aetna's present rates seem depressed enough, in spite of the 60% increase, to raise doubts as to how much premium costs might be reduced in the first few years. In seeking long term Society sponsorship, the best Aetna can offer us is rate increases that will not exceed 35% yearly in the next three years. Our actuarian seems to indicate that this would be a minimum increase to be expected from Aetna on the basis of the company's recent experience. A captive might need comparable increases. However, if a captive charges too much, it simply returns in time to physician owners.

The third item is availability. Since Aetna now has a monopoly in Connecticut, it seems essential that the Society have an alternative. Whether we should proceed with the organization of a company at present or in the future is a difficult problem. One must remember that in 1975, when most of the insurance companies dropped professional liability insurance, the crisis was not as great as that faced by Aetna in Connecticut at the present time. It seems likely that if even one of the proposals now before our legislature, such as the extension of the statute of limitations, were to become law, Aetna would find itself unable to continue professional liability. In order to compete, Aetna is radically reorganizing its own liability program emulating successful captive companies.

A basic question is whether a captive company could be sold to the physicians of the State now or do we need to wait for a sudden lack of availability or more radical increases in cost. A recent poll of members seems to indicate a potential for success at present. Under the pressure of increasing rates, there has been some fragmentation already of the 4,000 physicians now participating in the Society sponsored Aetna program. As time goes on there will be further fragmentation, making support for a captive company more difficult.

We have become convinced that a physician-owned professional liability insurance company, organized as soon as possible, will best meet the needs of physicians and of patients in Connecticut.

W. Raymond James, M.D.
*President*

Two convenient dosage forms:
100 mg (white) and 300 mg (peach)
Scored Tablets

Tablets imprinted with brand name to
assist in tablet identification.

Wellcome

**Burroughs Wellcome Co.**
Research Triangle Park
North Carolina 27709

UNIVERSITY OF MARYLAND

# Reflections from the Dean's Office

## On Managing a Pendulum

ROBERT U. MASSEY, M.D.

Recently a physician from Galway was telling some of us of his problems with the bureaucracy of the Irish Republic, and we tried to top his stories with accounts of our own.

"It won't get better right away," he said; "Things have got to get worse than they are on the other island before there can be much improvement."

He had expressed a similar opinion about the troubles in Ulster; things would have to get worse before they could find their way out of the killing.

The Greeks thought of history as cyclical, moving from chaos to tyranny, then to democracy and falling into chaos again.

This is a kind of fatalism which suggests that trying to manage society may be mostly in vain; the utopians, the great managers, seek for changelessness, a society which has finished with history. But the fatalism of recurring cycle need not be gloomy; the difficult times are often followed by times of great creativity. There are physiological and mechanical analogies tempting but dangerous to consider. In physiology, mechanics, and history, failures do occur, and for quite different reasons; whether they could have been prevented is a question for philosophers. Thoroughgoing determinists could hardly allow for a different past.

Academic medicine is facing one of those critical times. Right at the very height of the intellectual activity of the new biology we seem to be running out of young investigators and the will to sustain the work. A turn in history has begun too soon; the pendulum has begun its downward swing before we are ready. The post-war surge of activity in the university laboratories seems now to be ebbing. There were 15,000 physicians in 1968 who reported that their primary activity was research; in 1975 there were only 8,000. In 1963, almost half of the medical students who were asked said that research was an important and desirable career; in 1976, only two percent agreed to this.[1] In 1970, physician postdoctoral fellows represented two-thirds of all postdoctoral trainees; today they constitute fewer than one-third of a declining total.[2] It is easy enough to guess at the reasons, difficult to be certain. The new biology is more intellectually demanding than the old. There is distrust of science and technology. Material goods and the 40 hour work week weigh more heavily in the scales than the devotion and self-sacrifice demanded by a jealous Minerva Medica. Striving for intellectual achievement is elitist and unpopular in a populist time. Maybe the West is coming to the end of its vigor; the twentieth century has weathered enough to loosen the roots of any civilization.

If we believe in the reality of progress, our faith is shaken when progress stops, rests, or regresses. If, on the other hand, we see history as more like a pendulum, that analogy helps to reassure us that every swing must store energy for the next one. To carry the analogy further: the human mind is like the spring of the clock, but unlike a spring, it accumulates power with the passing of time; though clocks run down, there is no sign of our brains running down, and that is where progress comes in.

In a clock, there is a part called a crutch, which exerts gentle control on the pendulum rod to assure that the swing will not be too far in either direction. If it is not adjusted properly, the "ticks" will not be even and the clock may stop. It may be that all we can do to control the swinging cycles of history is occasionally to adjust the crutch, always with care; rough handling could stop the clock.

Already there is evidence that government and the universities recognize that they must pay attention to the strains that have developed between them; and already the saturation of clinical opportunity may be turning more students toward careers in research. The corporate leaders too are beginning to see that they cannot retain their positions in the world if America's science and technology fall behind, and that science and learning may once again need their material support. The pendulum swings in spite of our plans and our mistakes.

### REFERENCES

1. Legato, MH: The Disappearing Doctors, The Sciences, 1981; 21:15
2. Fredrickson DS: Biomedical Research in the 1980's, N Engl J Med 1981; 304:509-517

---

ROBERT U. MASSEY, M.D. Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

HEALTH SCIENCES LIBRARY

"You've got a suit, doctor, and it's not hearts or clubs."

Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

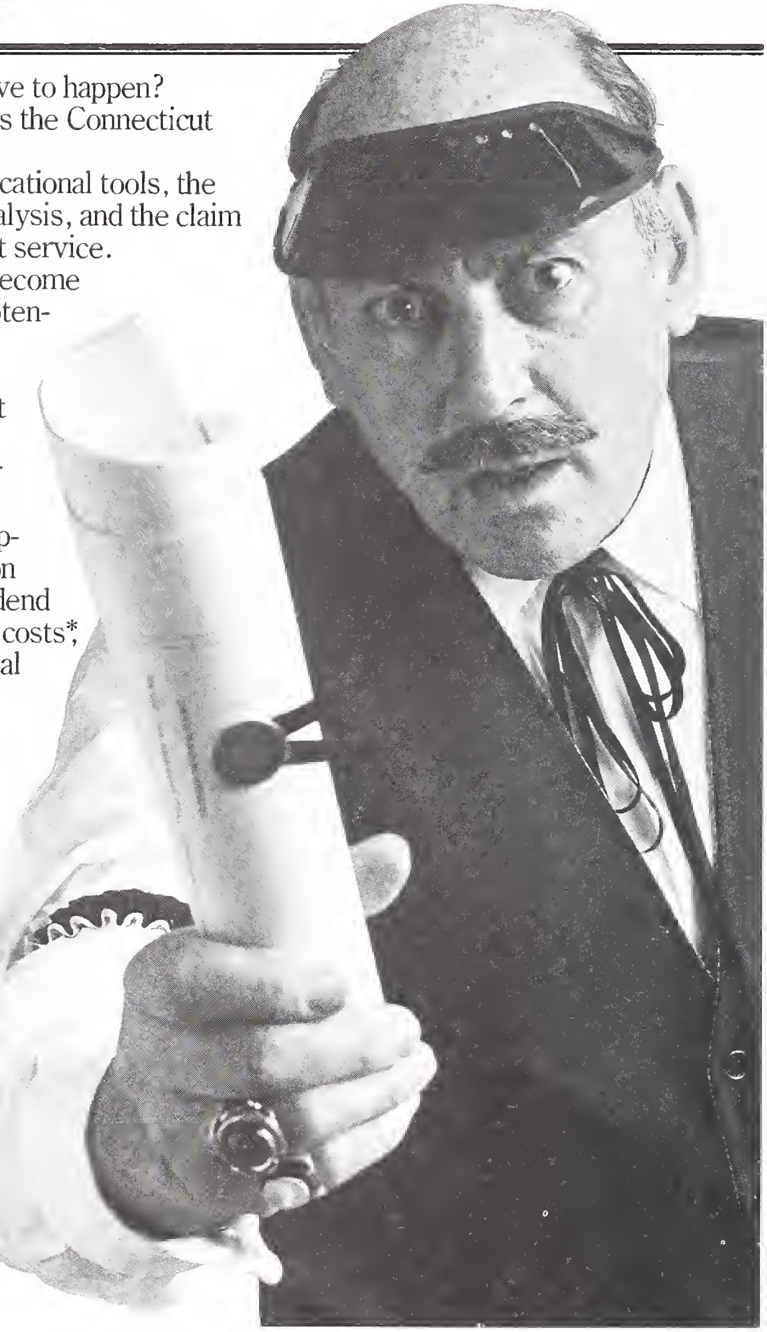
Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs*, 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.



Ætna
LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company

# Criteria for Determining That Death Has Occurred: II

JOSEPH M. HEALEY, J.D.

I have delayed finishing this column for as long as possible with the hope that there might be some resolution in the *Bacchiochi* case[1] unfolding in Stafford Springs. Since no resolution has been reached by my deadline this morning, I will postpone my discussion of that case and deal more generally with the physician's role in the determination that death has occurred.

William J. Curran, Lee Professor of Legal Medicine at Harvard Medical School, established the modern framework for consideration of the physician's role when he served as the lawyer-member of the Harvard Ad Hoc Committee to Examine the Definition of Brain Death. Professor Curran described the traditional approach of the law in treating the question of when death occurs as a question of fact to be decided in each individual case. Traditionally, the law assumed that the question of when death occurred was easily answered by determining whether all vital signs had ceased. Very few cases arose involving the use of this criteria. However, the increased capacity for transplanting organs and increased technological capacity for maintaining artificially the vital signs of the patient, led to a need to recognize more accurate and more appropriate criteria. As Professor Curran pointed out:

> "In this report, however, we suggest that responsible medical opinion is ready to adopt new criteria for pronouncing death to have occurred in an individual sustaining irreversible coma as a result of permanent brain damage. If this position is adopted by the medical community, it can form the basis for change in the current legal concept of death. No statutory change in the law should be necessary since the law treats this question essentially as one of fact to be determined by physicians. The only circumstance in which it would be necessary that legislation be offered in the various states to define "death" by law would be in the event that great controversy were engendered surrounding the subject and physicians were unable to agree on the new medical criteria."[2]

The criteria enunciated in the Committee Report have received almost unanimous support among the scientific community with the only major criticism being that the criteria are too conservative. Reaction among the lay community has been less unanimous. In part, some opposition has arisen because of a fear that the "new" criteria are subject to manipulation in the name of factors not directly related to the dying patient's best interest, such as organ transplantation or the cost of continuing treatment. In part, some opposition has arisen because of a misunderstanding about why brain criteria should be employed. Many assumed that the use of such criteria reflects a judgment that equates personhood with an intact, functioning brain and which rejects the brain damaged as not persons. In fact, the focus on brain death is a recognition that there is a complete, absolute dependency of the human organ systems necessary for life upon a functioning central nervous system. If the central nervous system becomes irreversibly destroyed, then there will follow in every case the cessation of the other systems and of all vital signs. Such cessation may not occur immediately because of the power of technological advances such as respirators to disguise the fact that death has occurred and to maintain some of the "vital signs" of patients for a temporary period. However, this delay is temporary because of the interdependence between the human organ systems and a functioning central nervous system.

Challenges to a physician's determination that death has occurred would generally involve two issues: (A) whether the criteria used were clinically acceptable; (B) whether the criteria were properly applied in the specific case. Discussion of these issues will continue next month.

REFERENCES

1. *Bacchiochi v. Johnson Memorial Hospital* (Superior Court, Hartford, County) 1981
2. Ad Hoc Committee of the Harvard Medical School, "A Definition of Irreversible Coma," *The Journal of the American Medical Association* Aug. 5, 1968, Vol. 205, p. 339

---

JOSEPH M. HEALEY, J.D., Assistant Professor of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, CT

HEALTH SCIENCES LIBRARY

**Connecticut Medicine**

*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland, *Literary Editor*
Vivian C. Feriola, *Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
Florence Keller, *Woodbridge*
James D. Kenney, *New Haven*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*
Norman A. Zlotsky, *Rockville*

# EDITORIALS

## A Study of Survivors of Cancer in Childhood

Recent advances in the treatment of childhood cancer[1] have given physicians new and difficult questions to consider. Children who have been cured have grown up. Some have married and had children. Others would like to do so. Many have asked their doctors for advice. What should we say about the risks of recurrence of the first cancer, or the possibility of some permanent damage and chronic disease including second primary cancers, from radiation or chemotherapy? What about genetic effects that might pose a risk to the children of a survivor?[2,3,4,5]

There will probably never be simple and wholly satisfactory answers to these questions, but a new, national study is under way. The Biometry and Clinical Epidemiology Branches of the National Cancer Institute are coordinating work in five areas of the United States. Connecticut, with the oldest cancer registry in the country, has records of the largest number of long-term survivors. To reach these people, and to enlist their help with a difficult and sensitive problem will call for the thoughtful cooperation of many Connecticut practitioners. The research plan requires interviews with former patients, their siblings, and with next-of-kin of patients who survived cancer at least five years, reached the age of 21 or more and died thereafter. The results should throw light on the issues of frequency of infertility, secondary tumors and psychosocial morbidity among patients, as well as questions about the incidence of birth defects and tumors in children of former patients. The Connecticut Cancer Epidemiology Unit is managing the Connecticut program. The Cancer Coordinating Committee of the State Medical Society has endorsed this study, and help is being given by many lay groups. Our staff is keenly aware of our dependence on the interest and concern of practising physicians to help us reach as many people as practicable for interview, and to do this with the continuing optimum health of the patient as the first priority.

J. Wister Meigs, MD

*Director*
*Connecticut Cancer Epidemiology Unit*
*New Haven, CT*

REFERENCES

1. Myers MH, Heise HW, Li FP and Miller RW: Trends in cancer survival among U.S. white children, 1955-71, J Pediat 87:815, 1975
2. Meadows AT, D'Angio GJ, Mike V, Banfi A, Harris C, Jenkin RDT and Schwartz A: Patterns of second malignant neoplasms in children. Cancer 40:1903, 1977
3. Siris ES, Leventhal BG and Vaitukaitis JL: Effects of childhood leukemia and chemotherapy and puberty and reproductive function in girls. New Engl J Med 294:1143, 1976
4. Harris CC: The carcinogenicity of anticancer drugs: A hazard in man. Cancer 37:1014, 1976
5. Toledo TM, Harper RC and Moser RH: Fetal effects during cyclophosphamide and irradiation therapy. Ann Int Med 74:87, 1971

## The New Pathology—Iatrogenic Pathology

There has been a steady decline in the mean hospital autopsy rate in the United States over the last few years from 41% in 1964 to 21.7% in 1975.[1] In a recent issue of *Connecticut Medicine,*[2] Dr. Nelligan indicated that this downward trend has also been occurring at Connecticut hospitals, and has been observed both at a major university teaching hospital and a community hospital level. Another study at a community hospital demonstrated that physicians attended the postmortem examination of their own patients in only 27 of 125

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

consecutive autopsies (22%).[3] Observations such as these have lead to increasing concern over the lack of interest in the autopsy examination as both an educational and investigational tool, a thought reflected in the titles of recent articles–The Autopsy: Its Decline and a Suggestion for its Revival,[1] Autopsy–Necessity or Anachronism,[4] and The Postmortem Examination: Scientific Necessity or Folly?[5]

It is apparent that present day adventures into new therapeutic modalities are creating a host of physician induced medical and surgical diseases, giving rise to numerous new diseases of medical progress–iatrogenic diseases.[6,7] It might be reasonable to expect that examination of these problems should be extended to the autopsy table, creating an area of study into what might be called iatrogenic pathology. Examples of this are numerous, and probably are best exemplified in the field of cardiovascular diseases. Surgery of congenital, valvular and coronary artery diseases has altered the expected evolution of pathologic processes, and in doing so has created new and different forms of pathologic expression. Just as present day surgery depended on a careful understanding of the "natural" pathology of heart diseases, further surgical and medical progress needs continual study and understanding of the new iatrogenic pathology it has created. Such knowledge can be acquired and used to its best advantage by following a disease process to its final conclusion at the postmortem examination. For this reason, more rather than less effort and attention must be directed into obtaining and studying pathologic material in patients subjected to new therapeutic modalities, not only in the surgical but also the medical disciplines, and correlating it with clinical information. A greater desire on the part of the practicing physician to obtain the autopsy, and a knowledge and awareness by the pathologist of new pathologic processes, are required.

In his monumental work *De Sedibus et Causis Morborum per Anatomen Indagatis Libri Quinque* published in 1761, John Baptist Morgagni, the father of pathologic anatomy, wrote–"Those who have dissected or inspected many (bodies), have at least learned to doubt; when others, who are ignorant of anatomy and do not take the trouble to attend to it, are in no doubt at all." Our present high level of achievement does not preclude continued adherence to the discipline of the postmortem examination.

Martin Duke, M.D.

### REFERENCES

1. Roberts WC: The Autopsy: Its decline and a suggestion for its revival. N Eng J Med 299:332-338, 1978
2. Nelligan DJ: The Autopsy—a valuable tool in medicine. Connecticut Medicine 44:488-492, 1980
3. Duke M: Personal communication
4. Autopsy—Necessity or Anachronism? *MD* December, 1980 p. 75 - 78
5. Burrows S: The postmortem examination: scientific necessity or folly? JAMA 233:441-443, 1975
6. D'Arcy PF and Griffin JP: Iatrogenic Disease. London, Oxford University Press, 1972
7. Moser RH: Diseases of Medical Progress: A Study of Iatrogenic Disease. Springfield, Illinois, 3rd Edition, Charles C Thomas, 1969

## Bacchiochi vs. Johnson Memorial Hospital

On March 13, 1981, at 8:07 PM, Melanie Bacchiochi, a 23-year-old woman, was pronounced dead by Dr. C. Evans Sawyer, her physician, when her heart stopped beating minutes after he disconnected her respirator. On February 11, however, he with other physicians stated that her total brain including the brain stem was functionally dead.

The issues involved have been the subject of hearings in the Hartford Superior Court for about two weeks, the last hearing on the day of her death, a case which could have important ramifications not only for medicine, but for law and society in Connecticut. Though she has died, the judge still has to give his opinion.

On January 30, 1981, while having wisdom teeth removed under anesthesia in an oral surgeon's office, she suffered cardiac arrest and brain anoxia, with resulting coma that lasted until her death. He resuscitated her in his office and she was immediately transported to the Johnson Memorial Hospital in Stafford Springs where she was intubated and connected to a respirator, necessary to maintain cardiorespiratory function, until her death.

On February 11, Dr. Sawyer and the consultant neurosurgeon, after repeated clinical examinations and using the Harvard criteria, confirmed by electroencephalograms, concluded that she had suffered permanent and irreversible loss of function of her total brain including the brain stem. He immediately notified her husband, parents, and relatives that her brain was dead, but continued the respirator because her heart was still beating.

He has been asked repeatedly why he did not then disconnect the respirator, common practice by physicians throughout the country in such situations. And here is an unfortunate incident: The family insists they asked him to disconnect the respirator, but he answers that there must have been a misunderstanding, that he was not asked. But he added, even if they had, he would not have complied until he consulted his own attorney, and especially that he get immunity from the Chief State's Attorney's Office. The hospital attorney then advised all participating parties, including the hospital, not to disconnect the respirator. Dr. Sawyer's decision was reinforced when the family filed suit, about February 26, asking the court for permission to have the respirator disconnected. The hearings took place March 2, 6, 9, and 13 in the Hartford Superior Court under Superior Court Judge Harry Hammer. (I attended all hearings.)

At one time or other, attorneys for the family, the State's Attorney for Tolland County, the Assistant State's Attorney for Connecticut, the court-appointed legal guardian for the patient, the hospital attorney, the oral surgeon's attorney, the attorney from the Connecticut Bar Association, attorneys for the Connecticut State Medical Society and the Connecticut Hospital Association, and others were participants, each bringing a different interest to the issues. The legal technicalities are complex not only for a lay person, but also seem to be for the judge and lawyers, since this is the first such case in Connecticut. There are no state precedents to rely on, although there have been similar situations in other states. To me as a physician, the main issue seemed simple—Was the patient's brain functionally dead? This could have been decided the first day; it was not, though I can understand the necessity for consultations and confirmatory opinions for the court. The courts now require specialists and objective evidence, here, electroencephalograms, though physicians may not consider them necessary.

At present there is no legislative or judicial definition of death in Connecticut. Lacking one, the legal definition is the unwritten common law—that death is the cessation of breathing *and* the heart beat. In 1979, the Legislature amended the Uniform Anatomical Gift Act to permit donation of organs from a patient who had suffered total brain death, without including cessation of the heart beat. Legally, however, this definition applies only to transplantation. It is ironic that if the patient had been a donor, she could have been pronounced dead on February 11 and the respirator could have been withdrawn. Dead for transplantation, but not dead otherwise!

This is why this case is so important, a first in our state, that could address the present void made by failure to recognize total brain death also as a criterion of death for all purposes, not only for transplantation. Twenty-five state legislatures and more than three state Supreme Courts have recognized and accepted brain death in addition to the traditional common law definition.

The State Attorney's Office was brought into the case by the patient's attorney because he had the authority to grant immunity to Dr. Sawyer if he did disconnect the respirator, though the judge himself also could give immunity. Withdrawal of the respirator could be interpreted as homicide if it were soon followed by cessation of the heart beat—with the possibility of a criminal indictment. Though the Assistant State's Attorney stated it was highly unlikely that he would take such action, he could not give absolute immunity. The impression he gave was that he would not have been party to the hearing but for being joined in the suit by plaintiff's attorney, nor would he have taken action in the case if the respirator had been disconnected. He might be required, however, to investigate if someone lodged a complaint. So no matter how sympathetic the judge and the Assistant State's Attorney were, they would not give immunity, at least at the end of the hearings.

Judge Hammer is intelligent, surprisingly knowledgeable about such cases for the short time he has had to study them, and compassionate about the emotional trauma to the family. Though to the family the hearings were long and drawn out, he explained to them that he had to look beyond their case because of its potential importance to the state. As it is, he hastened the process so that it may be one of the shortest on record for that type of case.

He was particularly interested in the ethical issues involved. He had asked the attorneys to invite opinions from ethicists about the issues. Called to testify by the patient's attorney was Father Paris, a Jesuit from Holy Cross, a Ph.D. in medical ethics and Professor of Medical Ethics at the University of Massachusetts Medical School. He teaches not only academic medical ethics, but makes rounds at local hospitals and participates in discussions and decisions on the ethics in clinical cases. He testified strongly that such cases should be handled by the family and physicians and not by the courts. He blamed the "timidity" of physicians for resorting to court. However, some physicians might argue that their fear, even paranoia, about litigation is becoming increasingly justified. It was the hospital attorney who advised that the respirator not be disconnected. Furthermore, the refusal of the State's Attorney to grant immunity was reported in page-wide banner headlines. Though it is the patient's family who suffers, some physicians want to avoid even the possibility of being a guinea pig in a law suit to "make the law." Besides the family's emotional trauma, the hospital bill from January 30 up to March 5 has been over $38,000, and about $1,000 a day since, not including legal or medical fees.

The judge asked Father Paris if he considered it ethical for a physician to withdraw the respirator. He replied that it was, but even more, that it was unethical to maintain the respirator over the objection of the family not only where brain death had been established, but even in terminal patients not yet legally or medically dead, but where death was imminent.

Statements and testimony by other religious denominations agreed with the testimony of Father Paris that it was ethical to disconnect the respirator. It was a disappointment that a representative of the Connecticut State Medical Society was not summoned to testify as to the ethical position of CSMS and the AMA, particularly about death and terminal illness. Also, though many physicians would respect the opinion of Father

Paris that it is unethical to maintain the respirator in cases like this, it does not reflect any written policy of either CSMS or the AMA, nor would either necessarily agree with the plaintiff's lawyer when he stated that refusal to disconnect the respirator was "poor medical practice." After all, Mrs. Bacchiochi was not legally dead until March 13, and the involved parties acted on the advice of the hospital attorney. Our own medical organizations increasingly are requesting and relying on legal advice, this very case for example.

And why did Dr. Sawyer finally decide to disconnect the respirator since neither the judge nor the Assistant State's Attorney gave immunity? The judge did make several statements immediately on conclusion of the hearings: One, that Mrs. Bacchiochi had suffered permanent and irreversible loss of function of her total brain including the brain stem, and that she was dead within the context of the Uniform Brain Death Act. But, she was not legally dead according to the common law. The judge gave suggestions to the attorneys that they agree on a procedure so that the sense of the hearings could be conveyed to Dr. Sawyer and the family. Though Dr. Sawyer's desired immunity could not be put "into writing," implicit was the consensus that there would be no criminal liability if Dr. Sawyer disconnected the respirator.

A few hours later, such a discussion took place. Shortly after, Dr. Sawyer disconnected the respirator, in the presence of the husband. Her heart stopped beating in some minutes, at 8:07 PM on March 13, 1981, legally dead.

Though the patient has died, many legal and complex ramifications still remain. The judge has many options open to him. Because of the importance of the case, it will be discussed in future issues in *Connecticut Medicine,* supplementing these preliminary observations.

As I left the last hearing, Ernest Diette, the Assistant State's Attorney, made a cogent observation: "We're really discussing the meaning of words in this case, and that's the business of lawyers."

Fred Fabro, M.D.

*March 17, 1981*

## A Request for Change of Address

Notification of address change should be sent at least six weeks in advance, include both old and new address, and a mailing label taken from the most recent copy. Include your new ZIP Code number. Duplicate copies cannot be sent to replace those undelivered through failure to send advance notice.

CONNECTICUT MEDICINE
160 St. Ronan Street
New Haven, CT 06511

# Letters to the Editor

**Letters to the Editor are welcomed and will be published, if found suitable, as space permits. They must be signed by all authors, typewritten in double spacing (including references), submitted in duplicate, must not exceed 1½ pages in length and will be subject to editing and possible abridgment. To be considered for publication, letters referring to a recent *Journal* article should be received within six weeks of the article's publication date.**

### SEX EDUCATION IN PERSPECTIVE

*To the Editor:* In the November 1980 issue of *Connecticut Medicine*, I had the pleasure of reading an editorial on "Sex Education in Schools: How Much and By Whom?" by Hans H. Neumann, M.D., New Haven Department of Health

If there are any discrepancies between Dr. Neumann's thoughts on the subject and mine, they are too unimportant to mention. I congratulate Dr. Neumann on his editorial.

His words, however, do indeed give me an opportunity to point out what I believe to be a very important fact. The mere term "sex education in schools" has been a factor in inhibiting all health education in schools. Sex education should be only a small part of health education in the schools. This health education is the responsibility of the Department of Education with the cooperation and advice from the Department of Health and the Medical Profession.

Courses on hygiene, contagion, the human body with its systems and their functions, growth and development, mental health and the ability to cope in these days of "Future Shock" should all be an important part of the curriculum of all schools. Some of these curricula have been written and tried, i.e. Ruth Byler and Dr. Parente in our own state.

Sex education cannot be avoided entirely, nor should it be. But as Dr. Neumann suggests, do it wisely.

James H. Root, Jr., M.D.

*Fayetteville, NC*

## NOTICE TO CONTRIBUTORS

Members of the Connecticut State Medical Society reading papers before other organizations are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult INFORMATION FOR AUTHORS. This material may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Please send them to:
J. Alfred Fabro, M.D., Editor
*Connecticut Medicine*
160 St. Ronan Street
New Haven, Connecticut 06511

# OTA Examines Recent Developments in Federal Policies Concerning the Computed Tomography (CT) Scanner

The Congressional Office of Technology Assessment (OTA) has just released a background paper* which summarizes important developments of the past two-and-one-half years concerning computed tomography (CT) scanners.

The paper updates the 1978 report, "Policy Implications of the Computed Tomography (CT) Scanner," at the request of the Senate Committee on Finance and staffs of other congressional committees.

The paper gives detailed information on the number and present distribution of CT scanners. It points out that the United States has the greatest number of CT scanners per population of any country in the world. In May 1980, there were 1,471 scanners, or 6.7 per million people. Within states, the number of scanners per million population varies from a high of 12.8 in Nevada to 2.4 in South Carolina.

The dramatically rapid rate of scanner diffusion (the process by which a technology enters and becomes part of the health care system) during 1975 and 1976 set the stage for OTA's original study. An equally dramatic decline in this rate from 1978 through 1980 is the backdrop for the update.

The decline in the diffusion rate has occurred during a period of changes in Federal policies toward medical technology affecting every stage of research, development, diffusion, and use of CT scanners. The background paper summarizes these changes and explores their impact, focusing, wherever possible, on the relationship between policy revisions and the numbers and distribution of the scanners.

CT scanners, which combine X-ray equipment with a computer and TV-like picture tube to produce cross-section images of the human body, revolutionized diagnostic medicine in the United States when first introduced in 1973. They are expensive to buy and operate. Over the past seven years, new applications of existing technologies and new technologies have rapidly expanded the field of "diagnostic imaging" (making pictures of the inside of the human body). The paper describes research and development in this new field and presents information on new developments such as ultrasound and nuclear magnetic resonance (NMR) scanners.

Some of the key issues are: Can the relative advantages of the different technologies be demonstrated? Can Federal policies rationalize the use of the many technologies? Will new technologies merely be added on to existing methods, driving up costs and contributing only marginal benefits to people's health? An examination of public policy toward CT scanning may indicate how far we are from having effective policies to promote the efficient expenditure of our health care dollar.

OTA is particularly concerned about regulatory approaches being considered to control CT scanners and other technologies in the absence of definitive scientific information on their efficacy and safety that will allow wise decisionmaking by Federal officials or insurance companies.

The trends in diffusion of CT scanners have caused much controversy, according to the new OTA paper. Although critics have generally blamed government interference for inhibiting the innovation process, the paper concludes there is no good evidence to indicate whether and to what extent the Federal health planning program has influenced the diffusion of CT scanners. A number of factors have affected scanner diffusion but the relative impact of each will probably never be fully understood. The paper suggests that the slowdown may be more a natural phenomenon than a result of Government policy. For example, the market for scanners may be beginning to reach its limits.

The question of whether Federal policies have had an impact on distribution of CT scanners also remains unanswered, according to the paper. There is, however, a clear case of maldistribution of the scanners. Some urban areas have exceptionally high scanner-to-population ratios (for example, 15.9 scanners per million persons in the District of Columbia), while some rural areas have no accessible CT scanner. There is a relative lack of CT scanners in urban public hospitals and Veterans Administration (VA) hospitals. The paper states that the greatest problem with the health planning program may be that planners' powers are largely negative, thus limiting their ability to assure placement in appropriate sites.

The paper notes that the real boon to diffusion and use of the CT scanner has been in the Government's almost open-ended commitment to pay for CT scans.

The paper concludes that although some changes have been made in policies regarding CT scanners since 1978, the underlying programs remain little changed, and the problems identified in OTA's 1978 report remain largely unaddressed. According to the background paper, the policy alternatives of the 1978 report (reprinted in the appendix of the background paper) still seem relevant to improving Federal policies toward medical technologies.

*March 3, 1981*

---

*OTA background papers are documents which contain information that supplements formal OTA assessments or are an outcome of internal exploratory planning and evaluation. The material is usually not of immediate policy interest such as is contained in an OTA report or technical memorandum, nor does it present options for Congress to consider. Background papers are neither reviewed nor approved by the Technology Assessment Board.

# SPECIAL NOTICES

## EFFECTS ON HUMANS OF EXPOSURE TO LOW LEVELS OF IONIZING RADIATION

May 14, 1981

The purpose of this symposium is to acquaint an audience of scientists, physicians, epidemiologists, and environmentalists with current knowledge of the sources of ionizing radiation and their effects upon humans.

The course will feature the following guests lecturers who are established authorities in their fields: Bernard F. Cohen, Ph.D., Professor of Physics, University of Pittsburgh; Merril Eisenbud, Sc.D., Professor of Environmental Medicine, New York University; Jacob I. Fabrikant, M.D., Ph.D., Professor, Donner Laboratory, University of California; John W. Gofman, M.D., Ph.D., Emeritus Professor of Medical Physics, University of California; Harald H. Rossi, Ph.D., Professor of Radiology, Columbia University; William D. Rowe, Ph.D., Director, Institute for Risk Analysis, American University; Robert J. Schulz, Ph.D., Professor of Therapeutic Radiology (Physics), Yale University; Warren K. Sinclair, Ph.D., President, National Council on Radiation Protection and Measurements, and Jan A.J. Stolwijk, Ph.D., Professor of Epidemiology and Public Health, Yale University.

This course is approved for five hours of Category 1 credit.

Further information and enrollment forms may be obtained from:

Office of Graduate and Continuing Education
Yale University School of Medicine
333 Cedar Street
New Haven, Connecticut 06510
(203) 432-4582

---

## *Reminder*

Connecticut State Medical Society
189th Annual Meeting

Annual Meeting of the House of Delegates
Wednesday, April 29, 1981 — 12:30 P.M.
Ramada Inn, North Haven

General Scientific Program
Wednesday, May 27, 1981
Sheraton Park Plaza Hotel, New Haven

*Plan Now to Save the Dates*

## Federal Compensation Program for Vaccine-Related Injuries

The Congressional Office of Technology Assessment (OTA) has released a technical memorandum* which outlines the elements and principles that should be considered in any legislation to establish a Federal compensation program for persons injured as a result of being vaccinated in public immunization programs.

The issue of compensation for vaccine-related injuries came to Congressional and public attention dramatically in 1976 in connection with the Federal Government's sponsorship of a mass immunization program against swine flu. In a recent development, a Federal court in Virginia awarded the first judgment from the Government for a "delayed reaction" injury to a swine flu vaccinee who developed Guillain-Barre (G-B) paralysis four months after her vaccination. Prior to this court decision, the Government had agreed to compensate patients who proved that they developed G-B within ten weeks of the shots. The memorandum discusses the swine flu program as an example of the problems inherent in compensating for vaccine-related injuries via the tort law system.

The memorandum is OTA's response to a request from the House Interstate and Foreign Commerce Committee. It expands on a chapter in the 1979 OTA report, "A Review of Selected Federal Vaccine and Immunization Policies."

The 1979 OTA report pointed to a major decline in the number of active vaccine manufacturers and of licensed vaccine products, noting that some researchers blamed Federal policies for at least part of the decline. Further, the report suggested that liability problems may be eroding the commitments of vaccine manufacturers, Congress, and State health departments to public immunization programs.

The 1979 report emphasized that all vaccines, even when properly manufactured and administered, may pose risks to users. Under the existing legal liability system, persons injured from vaccination must establish fault in court in order to receive compensation. The injured person generally sues one or more of the participants in the vaccination process (e.g., a party that manufactures, distributes, pays for, encourages the use of, or administers the vaccine). In four major cases in the past 11 years, including the recent swine flu decision, plaintiffs have won large judgments against vaccine manufacturers for injuries caused by nondefective and properly administered vaccines. This situation, according to the paper, has affected manufacturers' willingness to produce and supply vaccines.

The newly-issued OTA memorandum does not analyze the arguments for and against a Federal compensation program. Rather, it starts with the assumption that establishing such a program is desirable. The primary case for establishing a vaccine-injury compensation program, the OTA memorandum states, is that society is obligated to minimize the consequences of injury when a vaccinee is harmed instead of protected in public immunization programs.

---

*OTA technical memoranda deal with specific subjects analyzed in recent OTA reports or with projects presently in progress at OTA. They are issued at the request of Members of Congress who are engaged in committee legislative actions which are expected to be resolved before OTA completes its assessment. They are neither reviewed nor approved by the Technology Assessment Board (TAB).

# "Let Colonial put your Employee Benefits in alphabetical order."

Roland Smith, *Vice President — Trust*
Dave Marotto, *Assistant V.P. — Trust*

We've got the retirement planning experience and investment expertise to enrich your Employee Benefits program. Letter-perfect planning for companies and self-employed professionals.

We're professional Employee Benefit Specialists who work in conjunction with your attorneys and/or accountants. Colonial's pension and profit-sharing experts utilize the most contemporary financial tools and techniques to provide responsible as well as responsive investment management. And we have performance statistics to prove it! Our experts offer you such employee plans as ESOTs (Employee Stock Ownership Trusts), Thrift Plans, Simplified Employee Pension Plans, Defined Benefit Plans, Flexible Funding, Super Keoghs and a variety of other custom-tailored plans to suit your company's objectives.

For maximum experience in planning your Employee Benefits program, call Dave Marotto or Red Smith at Colonial Bank in New Haven 562-6638, Hartford 721-0441, or in Waterbury 574-7655. Colonial Bank is pleased to act as trustee, directed trustee, custodian or investment manager. Our business is enriching your life.

**Enriching your life.**

**Colonial Bank**
**Trust Group**

81 West Main Street, Waterbury, CT 06702

Major trust offices in:
**Waterbury • Hartford • New Haven**
**Torrington • Derby • New Milford**

Colonial Bank — Trust Group
Employee Benefits Department
81 West Main Street, Waterbury, CT 06702
Attn: D. Marotto

Gentlemen:

☐ Send me more information on your Employee Benefits programs.

☐ Call me for an appointment.

Name ____________________
Title ____________________
Company ____________________
Address ____________________
City __________ State ______ Zip __________

# 189th ANNUAL MEETING OF THE CONNECTICUT STATE MEDICAL SOCIETY
## SHERATON PARK PLAZA HOTEL, NEW HAVEN
## Wednesday, May 27, 1981

---

## GENERAL SCIENTIFIC PROGRAM

### MORNING SESSION

8:15 REGISTRATION — Mezzanine

8:30 - 10:00 MEETING OF SECTIONS OF THE SOCIETY

10:00 INTERMISSION TO VISIT EXHIBITS

BALLROOM WEST

10:20 CALL TO ORDER AND WELCOMING REMARKS
President,
Connecticut State Medical Society
Presiding: Adrian M. Ostfeld, M.D., New Haven

### SYMPOSIUM—CRITICAL THERAPEUTIC DECISIONS IN THE AGED

10:30 THE AGED—ARE THEY REALLY DIFFERENT?
IAN R. LAWSON, M.D., Professor,
Department of Community Medicine,
University of Connecticut School of Medicine, Farmington, CT

11:10 SPECIAL PROBLEMS IN THE EVALUATION AND TREATMENT OF THE EMOTIONAL DISORDERS IN THE ELDERLY
IAN R. CAMERON, M.D., Director of Psychiatry, Mt. Sinai Hospital,
Hartford, CT

11:50 PHARMACAL DYNAMICS AND CONSIDERATION OF AGING
MALCOLM B. BOWERS, JR., M.D.,
Professor of Psychiatry,
Yale University School of Medicine,
New Haven, CT

12:30 INTERMISSION

1:00 LUNCHEON — Ballroom East

### AFTERNOON SESSION

Presiding: Edward Dunn, M.D., Waterbury

### SYMPOSIUM—RISK ASSESSMENT OF ORGAN SYSTEMS IN THE AGED

2:00 CARDIOVASCULAR RISK ASSESSMENT
PAUL G. BARASH, M.D.,
Associate Professor of Anesthesiology,
Yale University School of Medicine,
New Haven, CT

2:20 RESPIRATORY RISK ASSESSMENT
CARL B. SHERTER, JR., M.D.,
Director, Pulmonary Medicine,
Waterbury Hospital, Waterbury

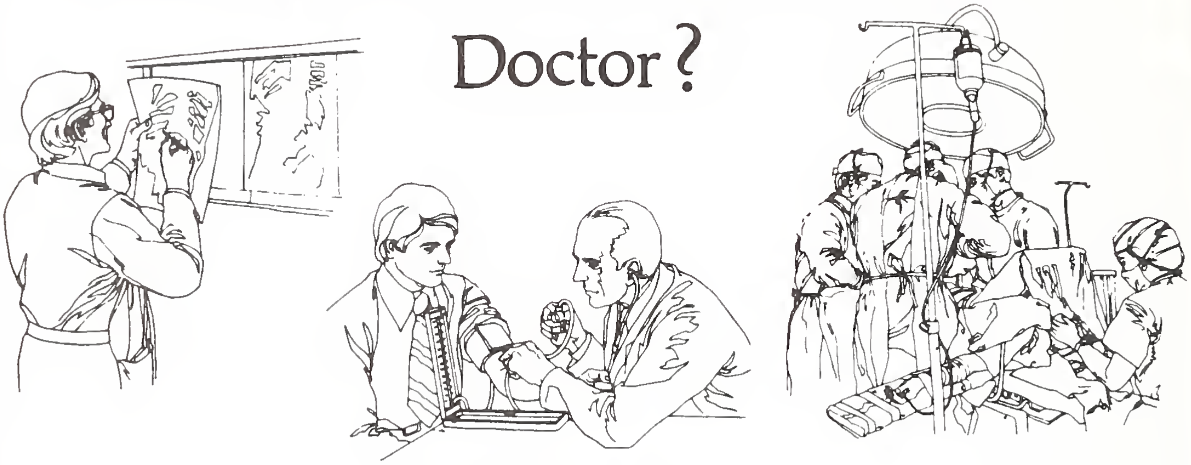
3:00 RENAL RISK ASSESSMENT
HOWARD B. GARFINKEL, M.D.,
Chief of Nephrology and Hypertension,
Danbury Hospital, Danbury, CT

3:30 PANEL ON CRITICAL CARE OF THE AGED IN THE PERIOPERATIVE PERIOD
Chairman: David Drezner, M.D., Hartford
Panel: Paul G. Barash, M.D., New Haven
Carl B. Sherter, Jr., M.D., Waterbury
Howard B. Garfinkel, M.D., Danbury

INTERMISSION TO VISIT EXHIBITS

4:00 MEETINGS OF SECTIONS OF THE SOCIETY

Have you considered participation, Doctor?



YOU SHOULD KNOW THAT:

- The maximum allowances in the Century Contract Comprehensive Schedule of Services have been increased twice in the last 10 months. The increases, in the aggregate, amounted to 35.8%.
- It is the goal of Blue Cross and Blue Shield to update the Century Contract schedule on an annual basis.
- Participating Providers receive prompt payment for covered services directly from Blue Cross and Blue Shield.
- Participation can reduce receivables and eliminate the need to bill patients in many instances.
- Over one million Connecticut citizens are Century Contract members for whom claims totaling $68.4 million were paid in 1979.
- Your patients that are Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Physician, please write or call:

Write:
Blue Cross & Blue Shield of Connecticut
Professional Relations
Box 1930
New Haven, CT 06509
Call:
New Haven area: 777-4481
Toll free: 1-800-922-1742

Blue Cross
Blue Shield
of Connecticut

® Reg Mark Blue Cross Assn
®' Reg Mark Blue Shield Assn

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## CALL
## ANNUAL MEETING OF THE HOUSE OF DELEGATES

**The 1981 Annual Meeting of the House of Delegates will be held at the Ramada Inn, North Haven, commencing at 12:30 P.M. on Wednesday, April 29.**

W. Raymond James, M.D., President
Joseph S. Sadowski, M.D., Speaker of the House
Louis C. Backhus, M.D., Secretary

12:00 REGISTRATION OF DELEGATES

12:30 CALL TO ORDER
REPORTS OF OFFICERS
REPORTS OF COMMITTEES
REFERENCE COMMITTEE HEARINGS AND REPORTS
ELECTION OF OFFICERS AND COMMITTEES
AWARDS
ADJOURNMENT

CSMS Members, who are not delegates, may attend the meeting as observers and participate in all reference committee hearings.

## *INVITATION*

*THE CONNECTICUT STATE MEDICAL SOCIETY*
*cordially invites all members and their spouses to attend the*
*ANNUAL DINNER*
*honoring*
*ANDREW J. CANZONETTI, M.D.*
*on his inauguration as*
*PRESIDENT*
*on Wednesday, April 29, 1981*
*Ramada Inn, North Haven*
*Social Hour 6:30 P.M. Dinner 7:30 P.M.*

*GUEST SPEAKER: JAMES S. TODD, M.D.*
*RIDGEWOOD, NEW JERSEY*
*Member, Board of Trustees, AMA House of Delegates*

*Reservations should be made with the Connecticut State Medical Society Office, 160 St. Ronan Street, New Haven 06511.*

*Tickets are $20.00 and include the dinner and pre-dinner Social Hour.*

## COUNCIL MEETING

Wednesday, February 18, 1981

### Attendance

Present were: Drs. James, Canzonetti, Backhus, Mendillo, Sadowski, Hecklau, Kamens, Hess, Friedberg, Van Syckle, Whalen, Jr., Abbot, Petrie, Jameson, Rubinow, Anderson, Magram, Freedman, Barrett, Zlotsky, Doctor, Beck, Seide, Shenker, Czarsty, McDonnell, Sonnen, and Fabro.

Also present: Mr. Norbeck, Mr. Sweeney, Mr. Brunell, Mr. Fiorentino, Mrs. Lindquist, Mr. Tomat (FCMA), Dr. Mulvihill, Dr. Bongard, Dr. C. Callan and Dr. Ahrens.

Absent were: Drs. Parrella, Klimas, Barrett, Bobruff and Bates.

### Introduction of James Mulvihill, D.M.D.

Council Chairman Andrew J. Canzonetti, M.D., introduced to the Council Dr. James Mulvihill, Vice President of Health Affairs and Executive Director of Dempsey Hospital. Dr. Mulvihill discussed the Health Center and stressed how interested he was in working with the medical community and sharing concerns and future plans. Dr. Canzonetti also welcomed back to the Council Drs. Roger Beck and Stewart Petrie.

### Approval of Minutes

It was VOTED to approve the minutes of the meeting of December 18, 1980, as published and distributed.

### Membership of AMA Councils

It was VOTED to nominate the following physicians for AMA positions:

J. Alfred Fabro, M.D., Torrington - Judicial
Mehdi S. Eslami, M.D., Waterbury - Advisory Committee on Graduate Medical Education
Orvan W. Hess, M.D., North Haven - Council on Medical Education

### American Association of Medical Assistants (AAMA)

It was VOTED to appoint Drs. Jon Fessel, New Haven, William Mancoll, Hartford, Herbert Lewis, New Haven and Jay Graves, Old Lyme, as advisors to the AAMA.

### Federal Trade Commission

It was VOTED to pursue a petition for a Supreme Court review of the Federal Trade Commission order, the cost of which will not exceed $5000.

### Public Relations Update

It was VOTED to receive for information Dr. Michael Sharon's report on activities of the Public Relations Committee.

### Fiscal Items

a) *American Association of Medical Assistants, Inc.:* It was VOTED to contribute $50 to the AAMA for a greeting in its official convention program for its 25th anniversary celebration.

b) *AAMA - Connecticut Chapter:* It was VOTED to contribute $50 to the state AAMA in order to help defray the costs of their annual bulletin.

c) *Yale and UConn Student Requests:* It was VOTED to contribute a lump sum payment of $200 each to the medical student groups at Yale and UConn to help defray the expenses of sending a representative to the American Medical Student Association (AMSA) National Convention in Houston.

### Report of Subcommittee on Preliminary Study of Nominations

With several amendments, it was VOTED to approve the report of the Subcommittee and to transmit a complete slate of nominees to the House of Delegates for election, with Council recommendation for approval.

### Future Council Meetings

Dr. Canzonetti reported on the meeting held with Drs. James and Parrella and Mr. Norbeck to establish future Council meeting dates. It was VOTED to accept the schedule which is as follows:

Wednesday, February 18 - Council
Monday, March 2 - (Special meeting) Council
Thursday, April 2 - Council
Wednesday, April 29 - CSMS Annual Meeting
Wednesday, May 20 - Council
Wednesday, May 27 - CSMS Scientific Meeting
Thursday, June 25 - Council
Wednesday, September 2 - Council
Thursday, October 15 - Council
Wednesday, December 16 - Council

### Resolution Re: Delivery of Health Care

After discussion of the subject resolution introduced by Dr. William Whalen, Jr., Willimantic, it was VOTED to approve of the sense of the second resolve which would have the CSMS Committee on Statewide Medical Planning, in cooperation with appropriate allied bodies concerned with health care in Connecticut, look into ways to define and develop recommendations which will preserve and protect the delivery of health care at a reasonable cost effective level.

### AMA House of Delegates

Orvan W. Hess, M.D., reviewed his written report on the recent AMA Convention. It was VOTED to receive the report as information and agreed that the CSMS AMA delegation would determine whether some resolutions in the report should come before the CSMS House of Delegates.

### Report of the President

President James reported on several different items:

a) He mentioned that a letter had been received from the Hartford County Medical Association notifying him of a $75,000 grant which will enable the

HCMA to conduct a one year study of Individual Practice Associations.

b) Dr. James reported on the hearing of the CSMS Charter Bill which was held on February 3. Drs. James, Friedberg and Ahrens testified for CSMS.

c) President James mentioned a communication that he had received from the President of the Connecticut Bar Association in which concerns were expressed regarding the proposed legislation on the unincorporated business tax.

d) Dr. James reported on a meeting with Drs. Canzonetti and Parrella and Mr. Norbeck in which Annual Meeting Plans were discussed. It was agreed to serve a light lunch at 12 noon with the House of Delegates meeting to follow at 12:30 P.M.

### Reports from Physicians Serving on State and Federal Agencies

In addition to the report prepared by Mr. Richard Fiorentino on "CSMS Monitoring of Planning and Regulatory Activities" which was distributed at the meeting, Drs. Merrill Rubinow, Edward Kamens, Orvan Hess, Jerome Freedman and Andrew Canzonetti discussed recent activities of the Connecticut Commission on Hospitals and Health Care and the local PSROs, HSAs, etc.

### Cumulative Minutes of Committee Meetings

It was VOTED to receive as information, and transmit to the Journal Editor, the minutes of committee meetings held as follows: Committee on Continuing Medical Education, 4/9/80; Cancer Coordinating Committee, 11/5/80; Committee on Public Health, 11/13/80; Committee on Continuing Medical Education, 12/16/80; Committee on Legislation, 12/29/80; Cancer Coordinating Committee, 1/14/81 and Committee on Medical Aspects of Sports, 1/15/81.

### Miscellaneous Business

a) *Professional Liability:* Dr. Lawrence Ahrens reviewed the recent activities of the Committee on Professional Liability and brought to the Council a few recommendations from a committee meeting of February 17. After a lengthy discussion, it was VOTED to authorized the Committee to utilize consultants as needed to select the best proposal to develop and implement a physician-owned insurance company that will provide alternative coverage for CSMS physicians for October 1, 1981, if possible.

b) It was VOTED that the House of Delegates meeting which will be held at the Ramada Inn on Wednesday, April 29th will be called to order at 12:30 P.M. preceded by a sandwich buffet at 12:00 noon.

### Life Members

It was VOTED to accept for information the following list of 46 Life Members:

Richard G. Abell, Riverside
Daniel C. Barker, Fairfield
Ronald S. Beckett, Hartford
John L. Buckley, Torrington
Wilbur H. Caney, Watertown
Arthur P. Capobianco, Bridgeport
Frank M. Castiglione, New Haven
Sidney A. Chait, Litchfield
John J. Cloonan, Stamford
Rector T. Davol, Greenwich
Joseph A. Dugas, Bridgeport
Richard B. Elgosin, Madison
Chester W. Fairlie, Hartford
John E. Franco, Hartford
William I. Glass, Bridgeport
Robert C. Good, Waterbury
George L. Hamilton, Jr., West Hartford
Arnold H. Janzen, Hartford
Robert H. Jordan, North Haven
Emil D. Karlovsky, Orange
Sidney Kligerman, Hartford
Paul Kunkel, Danbury
Peter C. Loewenberg, East Hartford
Elizabeth C. Lowry, Madison
Leonard Maidman, Wilton
Edgar O. Martinson, Madison
Frederick P. McIntyre, Stamford
Donald W. Morrison, Manchester
Adrian C. Moulyn, Stamford
John J. Nolan, Stamford
Edward B. O'Connell, New Haven
Vincent D. O'Neil, Newington
Juan Pella, Middletown
William F. Prestley, Hartford
J. Forbes Rogers, Stamford
Charles E. Roh, Hartford
Julius J. Sachs, Hartford
Stewart P. Seigle, Hartford
Paul M. Sherwood, Hartford
Daniel Slater, Hamden
Lillian A. Smith, West Hartford
Frank Tortora, New Haven
Irving Waltman, Hartford
John A. Woodworth, Hampton
Robert H. Wyatt, Greenwich
Harry M. Zimmerman, Bronx, New York

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on February 18, 1981. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for pursual by any interested member of the Society.*

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of Connecticut *Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### ANESTHESIOLOGY

Anesthesiologist—part time, contract basis. Contact Dr. John Pierce at Newington Children's Hospital, 181 East Cedar Street, Newington, Ct. Telephone 1-203-666-2461, Ext. 376.

### EMERGENCY ROOM

Emergency Physician—full time position available in modern 226-bed community hospital in eastern CT, 33,000 visits yearly; 42-hr. work week; salary negotiable. Send CV to G.I. Springer, M.D., Chief of Emergency Services, W.W. Backus Hospital, 326 Washington St., Norwich, CT 06360.

### FAMILY PRACTICE

Large adult medical practice now available for immediate sale in New Haven county. Yale-affiliated hospital. Includes offfice and x-ray equipment. Send CV to CSMS/GP-ERH.

For sale—Medical Family Practice. Five exam rooms fully equipped with lab. 2,000 sq. ft. of space. Central CT community location. Contact Mrs. Michael Gualtieri, 55 Forest Ridge Rd., Waterbury, CT 06708.

Opportunity for a young Family Practitioner to take over an active practice on a cost sharing basis. Present Family Practitioner wishes to retire gradually over the next two years. Call 1-203-443-3778.

Solo practice available. Retiring from practice. No charge and equipment free. City located between New Haven and Hartford. Contact CSMS or call 235-0091 after 6:00 P.M.

Well-established family practice of recently deceased physician available. Located in the suburbs of the nation's capital in Arlington, Virginia. Fully equipped office. Please call Mrs. T.A. Moneymaker at (703) 892-5128.

Family practice or internal medicine: Immediate opening for primary care physician to join same in waterfront Connecticut. Community and/or University Hospital teaching opportunities. Subspecialty interests encouraged. Send resume and salary requirements to CSMS FP-IM/JRS.

### INTERNAL MEDICINE

Internists with specialty in cardiovascular diseases seeking Board certified or eligible associate, with eye to partnership. Sub-specialty welcomed but not essential. Located in medium size shoreline community. Send resume and salary requirements to CSMS/IM-RLVDB.

### OBSTETRICS AND GYNECOLOGY

Obstetrician/gynecologist needed for growing multispecialty medical group of an established qualified HMO, affiliated with a medical center and serving 26,000 members. Require strongly qualified physician to work with OB/GYN group, midwives, and primary care physicians to provide comprehensive care. Excellent fringe benefits and salary with this permanent position to begin July 1, 1981 - EOE-M/F. Send resume to: Dr. Ronald T. Rozett, Medical Director, Community Health Care Center Plan, 150 Sargent Drive, New Haven, CT 06511.

### ORTHOPEDIC SURGERY

Two Board- certified Orthopedic Surgeons presently engaged in general orthopedics in Waterbury, CT. Interested in adding new member to organization. Write CSMS/Ortho/MOG.

### OTOLARYNGOLOGIST

Excellent opportunity for Board Eligible or Board certified otolaryngologist in a one man otolaryngology practice. First year salary guaranteed, including malpractice insurance. Attractive Connecticut College community with modern hospitals. Modern office with latest equipment. Qualified staff, including x-ray technician, certified audiologist and ENG technician. Write CSMS OTOL/HS.

### RADIOLOGIST

Full or part-time association for highly competent and personable radiologist having ultra-sound expertise. Private office practice in central Connecticut. Write CSMS RAD/ACH

### SCHOOL PHYSICIAN

Part-time school physician to examine students participating in athletics. Set own hours. Contact Ralph E. Hughes, Bullard Haven Tech. School, Bdgt. Tel. No. 579-6129.

### VARIOUS SPECIALTIES

Seeking physicians to locate in the center of Branford. Brand new office available for practice of Ear, Nose & Throat, Dermatology, Ophthalmology, Urology, Orthopedic Surgery. Area in need of these subspecialties. Plenty of parking. Please contact: Robert Aaronson, M.D., P.O. Box 673, Branford, CT 06405.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### INSTITUTIONAL

Mar. '81. Age 68. MD Tufts Coll. Medical School. Int: Grace Hospital, New Haven. Res: Children's Mem. Hospital, Chicago. Passed Nat'l. Bds., Certified AB. Seeking part-time or full time institutional practice in chronic disease hospital. Write CSMS IP/WG

### FAMILY PRACTICE

July '82. Age 27. MD: Case Western Reserve U. Int: No. Carolina Baptist Hospital, Bowman Gray School of Med. Res: North Carolina Baptist Hospital. Passed National Boards. Seeking group or associate practice. Write: Paul D. Harrington, 3826-L Country Club Rd., Winston-Salem, North Carolina 27104.

Available immediately. Age 34. MD: Jefferson Medical College, three yr. res. in Family Practice. Passed National Board and Certified by American Board. Interested in group, associate practice. Danbury-Bethel area preferred. Write Michael R. Lewis, M.D., Route 7, Box 84, Binghampton, New York 13903.

Available immediately. Age 56. MD: Albany Medical College. Internship: Norwalk Hospital. Res: Cornell University Infirmary & Tompkins County Memorial Hospital, Ithaca, NY. Passed National Boards. Interested in solo, group or associate practice. Write Charles H. Tracey, M.D., 77 Piper's Hill Road, Wilton, CT 06879 (Holds Ct. License)

March '81. Age 45. MD: U. of Rochester and U. of P.R. Int: Presbyterian Hospital, NY. Res: Ohio State Med: Post-Doctoral, Ohio State & Cleveland Clinic/Ph.D. Med. Physiology. Has Nat'l Boards, Eligible American Boards. 10 years' experience in F.P. and Int. Med., 3 years emergency room. Interested in group, institutional, or industrial practice. Write CSMS IM/FP/E/PNS.

## INTERNAL MEDICINE

Available immediately. Age 35. MD: Seth G.S. Medical College, Bombay. Int: K.E.M. Hospital, Bombay, Res: St. Vincent's Med. Ctr., Staten Island, N.Y. Fellowship: U. of Cincinnati Med. Ctr., Cinc. Cert. Amer. Bd. Seeking group, associate or institutional practice. Write Prabhakar N. Vaidya, M.D., 7752 Montgomery Rd., Apt. 81, Cincinnati, OH 45236.

July 1, '81. Age 31. MD: Univ. of Graz, Austria. Int. & Res: Monmouth Medical Ctr., Long Branch, N.J. Eligible AB. Interested in solo, group or associate practice. Write: William C. Zuck, Jr., M.D., 1769 Raleigh Ct. W Apt. 25-B, Ocean, NJ 07712.

## NEUROLOGY

Aug 1, '81. Age 31. MD: College of Phys. & Surgeons. Int: Beth Israel Hospital, NY. Res: Albert Einstein, NY. Fellowship: Neurological Institute, NY. NB and Elig. for AB. Will consider solo, group, associate or institutional practice. Experience in EMG, EEG, VER and would like to incorporate them into my practice. Write: Walter L. Nieves, M.D., 57 Elmwood Place, Short Hills, NJ 07078.

## OBSTETRICS AND GYNECOLOGY

July '81. Age 31. MD: Lady Hardinge, New Delhi, India. Int: U. of Delhi Hospital. Res: New York Infirmary Hospital (3 years). Eligible AB. Seeking solo, group or associate practice. Contact M.B. Agrawal, M.D., 318 E. 15th St., Apt. 6A, New York 10003.

## OPHTHALMOLOGY

Available immediately. MD: McGill U., Montreal. Int: Genesee Hospital, Rochester, NY. Res: Royal Victoria Hosp., Montreal. Taking last part of NB; AB eligible. Will consider 11 openings. Write: Savian P. Nicholas, M.D., 1100 Dr. Penfield Ave., Suite 121, Montreal, Quebec H32-1A8.

## PATHOLOGY

July '81. Age 33. MD: JLN Medical College, India. Int: JLN Medical Hospital. Res: Easter Va-Grad. School of Medicine, VA. 1977-81. Seeking solo, group, associate, or institutional practice. Write Aruna Kumar, M.D. 6223 B Newport Ave., Norfolk, VA 23505.

## PEDIATRICS

July '81. Age 31. FLEX. AB-Eligible. MD: Government Medical College, India. Int.: Homer G. Phillips Hospital, St. Louis, Mo. Res.: City Hospital, St. Louis, Mo.: Bridgeport Hospital, Bridgeport. Looking for full-time job in Pediatrics. Write Neena Aggarwal, M.D., 92A Robert Treat Drive, Milford, CT 06460.

Neonatology: July '81. Age 35. FLEX. AB and Nat'l bds. cert.-Ped.-elig. Neonatology. MD: India. Int.: St. Peter's Hosp. Res.: U.Conn. Fellowship: Univ. of Mississippi Med. Ctr. Grp. or instit. practice in med. community in CT. Husband neuro-surgeon looking for same area. Write V. Holla, M.D., 5840 Ridgewood Road # S-5, Jackson, MS.

Sept. '81. Age 26. AB-cert. Nat'l bds. cert. MD: Boston University School of Medicine. Int.: Boston City Hospital. Res.: Brown University-Rhode Island Hospital. Will consider group or associate practice. Contact Jon R. Jolles, M.D., 166 Raleigh Ave., Pawtucket, RI 92860.

July '81. Age 29. Nat'l bds., cert. AB-eligible. MD: Tufts Univ. Int.: Long Island Jewish Hillside Medical Ctr. Fellowship: University of Virginia-Behavioral Pediatrics. Group, associate or institutional practice. David S. Katz, M.D., 747 Madison Ave., Charlottesville, VA 22903.

July '81. Age 28. Nat'l bds. cert., AB-eligible. MD: University of Virginia. Int.: University of Connecticut Health Ctr. Res.: Univ. of Conn. Affiliated Hospital. Seeking Institutional or clinic practice. Contact Russell Stokes, M.D., Lake Hills Village, Lyman Road, Wolcott, CT 06716.

Availability open. Age 30. MD: Baroda Medical College. Int: Brooklyn Jewish Hospital. Res: Lincoln Hospital. Eligible for American Board Cert. Interested in solo, group, associate or institutional practice. Write Yogesh J. Pandya, 24 Paerdegat-15th St., Brooklyn, NY 11236.

PEDIATRICS - CONTINUED

Available 3 mos. notice. MD: U. of Conn. Int: and Res: U. of Ct. Passed N.B., Cert. AB. Interested in group or associate practice. Write: Thomas H. Gorin, M.D., Mountain Rd., Alfred, Maine 04002.

## PSYCHIATRY

July '81. Age 70. MD: U. of Barcelona, Spain. Int. and Res: U. of Barcelona. Passed Nat'l Boards; Certified Amer. Bds. Seeking group, associate or institutional practice. Write CSMS PSY/FM

## RADIOLOGY

Nuclear Medicine: Available July 1, '81. Age 29. Passed Nat'l bds., eligible AM. MD: U. of Pittsburgh. Int.: Presbyterian U. Hospital, Pittsburgh. Res.: Allegheny General Hospital, Pittsburgh. Fellowship: Nuclear Medicine, Emory U. Hospital, Atlanta, GA. Experience in all aspects of Nuclear Medicine—imaging, nuclear cardiology, RIA, etc. ABNM, ABIM-eligible. Write Margaret M. LaManna, M.D., 902 Oakdale Road, N.E., Atlanta, GA 30307.

## SURGERY

July '81. Age 30. Nat'l bds., cert. SUNY-Stony Brook. Int.: UCLA Medical Center, Res.: UCLA Medical Center. General & Vascular Surgery. Desires group or associate practice. Large or medium community. Brian J. Acker, M.D., 575 S. Barrington Ave., #102, Los Angeles, CA 90049.

Sept. '81. Age 35. Nat'l bds., cert. General, Vascular and Hand Surgery. MD: Columbia College of P&S. Int. and res.: St. Luke's Hospital. Solo, group or associate practice. Warren Booth Burrows, M.D., 1142 Canterbury Sq., Indianapolis, IN 46260.

July '81. Age 36. FLEX. AB-eligible. MD: Assam Medical College, India. Int.: Misericordia Hospital, NY. Res.: St. Clare's Hospital, NY. Looking for group, associate or institutional practice. Write Bijoy B. Sarmaroy, M.D., 631 E. 235th St., New York, NY 10466.

July '81. Age 34. MD: King George's, Lucknow, India. Int: U. of Lucknow Hospitals. Res: N.Y. Univ. and NY Infirmary Hospital 1976-80. Part I of Amer. Bd. Seeking solo, group or associate practice. Contact R.M. Agrawal, M.D., 318 E. 15th St., Apt. 6A, New York 10003.

July 1, '81. MD: Seoul Nat. U. Medical School, Seoul, Korea. Int: Passaic Gen. Hosp. Res. 3 years at Englewood Hosp., NJ; Res. 1 yr. Memorial Sloan-Kettering, NY; Res. 2 yrs. at St. Mary's Hosp. Waterbury, CT. Elig. AB. Interested in solo, group or associate practice. Write: Jin-Young Lee, M.D., St. Mary's Hospital, 56 Franklin St., Waterbury, CT 06702.

July '81. Age 32. MD: Govt. Stanley Medical College, Madras, India. Int. and Res: St. Francis General Hospital, Pittsburgh, Pa. Fellowship: St. Francis General Hospital. Passed Flex, Part I, American Board of Surgery. Seeks associate, group or solo practice. Contact Nagamalli Ramakrishna, M.D., 302A Glen Douglas Drive, Glenshaw, Pa. 15116.

July '81. Age 40. MD: Haiti College of Medicine. Int: Harlem Hospital. Res: Harlem Hospital and St. John Episcopal Hospital. Fellowship in cardio-thoracic surgery, St. Francis Hospital, Long Island. Eligible for American Board. Interested in solo, associate or institutional practice. Experience in oncological surgery, traumatic surgery, hyperalimentation and vascular surgery. Write Jean Albert Midy, M.D., 99-18-222nd St., Queens Village, New York 11429.

## UROLOGY

July '81. Age 33. MD: Autonomous U. of Guadalajara, Mexico. Int: Long Island Jewish Hosp., New Hyde Park, NY. Res: New York Medical College. Seeking solo, group or associate practice. Write Barry Sonkin, M.D., 65-90 160th St., Flushing, NY 11365.

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE*, 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE*. The *JOURNAL* does not hold itself responsible for statements made by any contributor.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to: *CONNECTICUT MEDICINE*, 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

# CLASSIFIED

WANTED: CONNECTICUT: Career Emergency Physician to join full-time group. Emergency Department cares for 32,000 patients yearly. Has paramedic program in seashore community of 53,000 people. Please send CV to Chairman, Department of Emergency Medicine, Milford Hospital, 2047 Bridgeport Avenue, Milford, CT 06460.

FOR SALE: Medical or Dental or Paramedical Professional Suite, 714 Chase Parkway Professional Building, Waterbury, Connecticut; 1224 or 1400 square feet; close proximity Waterbury and St. Mary's Hospitals, major highways. Excellent terms and financing. Call 756-4410.

## CLASSIFIED ADVERTISING RATES

$40.00 for 25 words or less; 50 cents for each additional word.

$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.

No agency commission on classified advertising.

Closing date: Copy must be received by the first day of month preceding month of issue.

A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

Connecticut Valley Hospital in Middletown is seeking six Psychiatrists for key positions aimed at further energizing its treatment, educational and research programs, which are strongly affiliated with Yale University. Positions include Assistant Superintendent for Clinical Services, Psychiatric director for the Out Patient Clinic and four Psychiatric team leaders. The Hospital has ten accredited training programs including a four-year Psychiatric Residency training program. Interest and ability in clinical teaching is supported by a Yale faculty appointment. The program is dynamic, diversified with many areas of psychiatric interest, or subspecialization to enhance career opportunities.

The opportunity exists for limited private practice. Salary is negotiable commensurate with experience and training. Liberal benefits package includes comprehensive health insurance, retirement, life insurance, paid vacation and sick leave, paid professional conferences, deferred compensation, 12 paid holidays, personal leave, and the possibility of on-campus housing at minimal expense. Location in the area provides excellent private and public schools in a vital New England university town with abundant cultural and recreational opportunities.

License, Board certification or eligibility are required.

Send resume to: William Sledge, M.D.
Chairman, Search Committee
Dept. of Psychiatry
Yale University
34 Park Street
New Haven, CT. 06508

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

# Ultrasound in the Diagnosis of Occult Infection

ARTHUR T. ROSENFIELD, M.D. AND

KENNETH J.W. TAYLOR, M.D., PH.D.

Ultrasound is a relatively new technique which during the past decade has taken a major role in the diagnosis of abdominal pathology. Because it is a safe and rapid method that causes no discomfort, ultrasound serves as an excellent initial study in evaluating patients for infection. While early equipment permitted discernment of major structure outlines without any parenchymal detail, gray scale images permit characterization of regions of interest only a few millimeters in size.

Ultrasound can diagnose subdiaphragmatic, intra-abdominal, hepatic, splenic, and pelvic abscesses with a high degree of accuracy.[1-4] Abscesses have a wide spectrum of appearances ranging from echo-free cystic masses (Figures 1 and 2) to highly reflective air-containing cavities (Figure 3). During scanning the abdomen can be palpated to identify and further scrutinize tender areas for any underlying abscess.

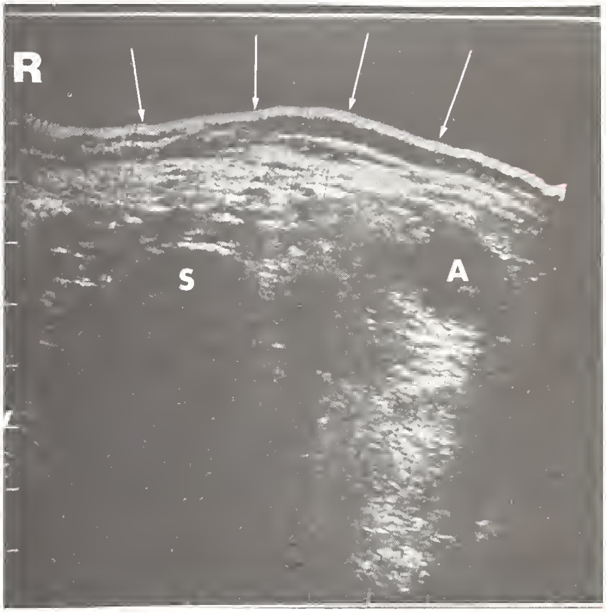


Figure 1
Periumbilical abscess: 60-year-old female with fever one week after abdominal surgery. Transverse scan at the level of the umbilicus demonstrates a mass (A) with a few scattered low-level echoes which represents an abscess. This was drained percutaneously. (S=spine, R=right, arrows indicate anterior abdominal wall).

Ultrasonic diagnosis of abdominal abscesses has two major limitations. First, other masses containing fluid or complex materials, such as bowel or a cyst, can mimic an abscess when ultrasound alone is used for the evaluation. Coordinated imaging or percutaneous aspiration of the region of interest can obviate this problem. The second limitation is that bowel gas and bone reflect or attenuate most of the ultrasound beam. Thus, some abscesses, especially in the retroperitoneum, may be hidden from ultrasound. Since gas reflects the ultrasound beam completely, the ultrasonic distinction between gas-containing abscess and bowel may be difficult. The ultrasound study should be evaluated in conjunction with the plain film of the abdomen which permits gas collections to be localized (Figure 3). Fluid-filled bowel may also mimic an abscess sonographically. However, dynamic ultrasound scanning, which permits identification of organ motion, can be used to evaluate the region for peristalsis. The presence of peristalsis indicates bowel, while its absence suggests abscess. Nonetheless, if an abscess is strongly suspected in the abdomen and the ultrasound study is equivocal, or normal, computed tomography should be used for evaluation. Computed tomography readily permits the identification of gas, and opacification of bowel can be done to help distinguish bowel from gas-containing abscess. Similarly, percutaneous aspiration will permit this distinction and is a safe procedure when a small needle is used, even if the bowel is aspirated.

*Coordinated Imaging.* $^{67}$Gallium citrate is a radioisotope which can be used for the diagnosis and localization of abdominal and pelvic abscesses.[5] The

---

ARTHUR T. ROSENFIELD, M.D., Associate Professor of Diagnostic Radiology. KENNETH J.W. TAYLOR, M.D., Ph.D., Professor of Diagnostic Radiology; both of Yale University School of Medicine, Department of Diagnostic Radiology.

Reprint requests to Yale University School of Medicine, 333 Cedar Street, New Haven, CT (Dr. Rosenfield).

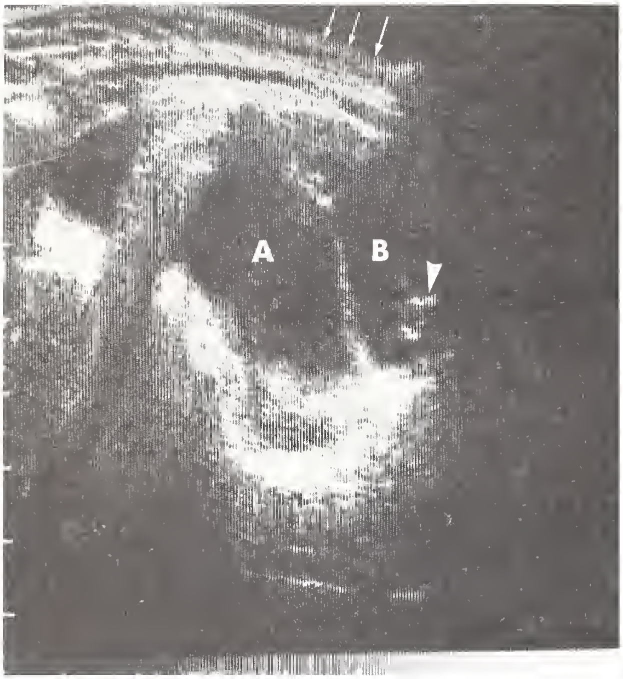


Figure 2
Ruptured appendix leading to pelvic abscess in a 12-year-old girl. Longitudinal scan through the right pelvis demonstrates a mass (A) with a few scattered low-level echoes representing the pelvic abscess. Note the bladder (B) caudad to the abscess. Arrowhead indicates Foley balloon. The uterus was displaced to the left and is not seen. (Arrows indicate anterior abdominal wall.)

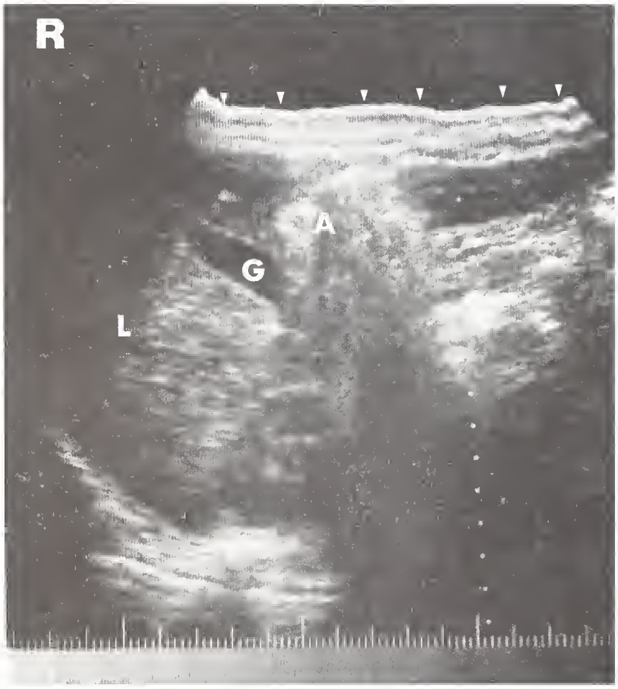


Figure 3A
Gas-containing abscess: 6-year-old with fever. Transverse scan through the upper abdomen demonstrates a gas-containing abscess (A) as a region of intense echoes which attenuates the ultrasound beam. (L=liver, G=gallbladder, R=right, arrowheads indicate the anterior abdominal wall.)

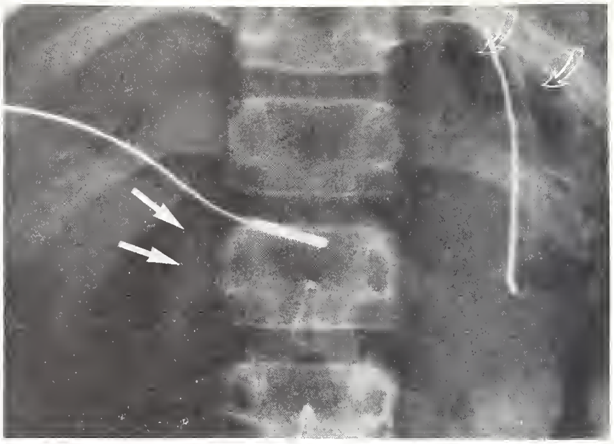


Figure 3B
The abscess was drained percutaneously. (Note the drain overlying the spine.) Abnormal gas collections are seen to the right of the spine. (straight arrows) and in the left upper quadrant (curved arrows.)

isotope concentrates in abscesses, areas of inflammation, and some tumors. Because of its failure to differentiate among abscess, tumor, and phlegmon, the results are non-specific, although highly sensitive. Persistent uptake in surgical wounds and bowel may cause confusion and necessitate repeat scanning. A reliable initial reading for abnormality generally requires 24 hours and a final reading may take up to 48 hours. Either ultrasound or computed tomography can be used to evaluate further the region that gallium scanning has identified. These techniques generally permit distinction between phlegmon which is not liquefied, and an abscess, which can be drained. However, when a question remains, percutaneous aspiration, using the technique that best identifies the region of interest, can make the distinction. In general, the greater safety and lower cost of ultrasound make it the more desirable initial study to evaluate a region that is abnormal on gallium scanning. However, a negative or equivocal ultrasound should be followed by computed tomography to exclude abnormality definitely.

In summary, the coordinated imaging findings of an abscess are a region which (1) has abnormal activity on $^{67}$Gallium radioisotope scanning and (2) is fluid-filled and/or contains debris on ultrasound or computed tomographic scanning.

On occasion, arteriography will be necessary to verify the presence of abscesses in the parenchymal organs. Abscesses become liquefied so that they are avascular centrally. Depending upon the age of the abscess, a vascular rim may be identified.

*Percutaneous Aspiration* using ultrasound guidance is a safe procedure which, when pus is aspirated, is diagnostic of abscess. The failure to aspirate pus does not exclude abscess since it is possible to miss the lesion, or the pus may be too thick to drain using the small needles (22 gauge) which are standard for this procedure. Although it is possible to aspirate the mass using a variety of techniques, the general rule is to use the modality that identifies the mass to guide aspiration. Rapid evaluation can be insured if the clinician requests an ultrasound examination for abscess with immediate percutaneous aspiration for diagnosis if indicated.

## Percutaneous Catheter Drainage of Abdominal Abscesses

Percutaneous catheter drainage of abdominal abscesses can be performed using ultrasound, fluoroscopy, or computed tomography, singly or in combination.[2] (Figure 3) The initial procedure is to use a small needle to aspirate the region of interest in order to verify that one is dealing with an abscess. Larger catheters are then introduced by methods described.[2] Gerzof et al successfully drained 22 of 24 abdominal abscesses using this method.[2] Thus, percutaneous catheter drainage may be used to drain abscesses successfully and should be considered as an alternative to surgical drainage.

*Phlegmon.* Phlegmon may appear as a solid or cystic region on imaging studies. This is a particular problem in the kidney where focal bacterial nephritis may look like a solid mass and only the presence of bacteruria may indicate that one is actually dealing with infection. The characteristic imaging findings of acute focal bacterial nephritis are those of a solid mass with a decreased nephrogram density on urography, computed tomography, or angiography, gallium scanning demonstrating abnormal activity within the mass and frequently in other regions of the organ, and the ultrasound study showing echogenicity equal to or lower than the renal parenchyma. Phlegmon within the liver or spleen generally appears as a region of intense echoes and within the pancreas is relatively lucent (Figure 4). The distinction between phlegmon and tumor or abscess may be impossible by imaging alone, but the resolution of the process after appropriate antibiotic therapy can be verified by sequential imaging techniques, thus indicating that phlegmon is the correct diagnosis. If indicated, percutaneous aspiration of the area in question can be performed to distinguish phlegmon from abscess.

*Gallbladder Disease.* Gallbladder disease may be the source of occult infection or may lead to acute symptoms localized to the right upper quadrant. Ultrasound can play a significant role by providing rapid screening for gallbladder disease. The presence of a focal opacity within the gallbladder which attenuates the ultrasound beam, leading to an "acoustic shadow," and moves with gravity is characteristic of cholelithiasis. No further diagnostic studies are needed to detect the presence of gallstones. If the gallbladder is not seen in a fasting patient and the gallbladder fossa is clearly identified, there is a 95% chance of gallstones. A nonshadowing focal opacity which moves with gravity may be gallstones, but is not diagnostic of cholelithiasis. Sludge within the gallbladder without definite stones is not indicative of cholelithiasis and is not of great clinical usefulness. Other studies such as an oral cholecystogram should be performed for further evaluation. A normal study generally indicates that gallstones are not present. However, because ultrasound is a tomographic technique, small stones may be missed, and if clinical suspicion is high, other studies should be performed.

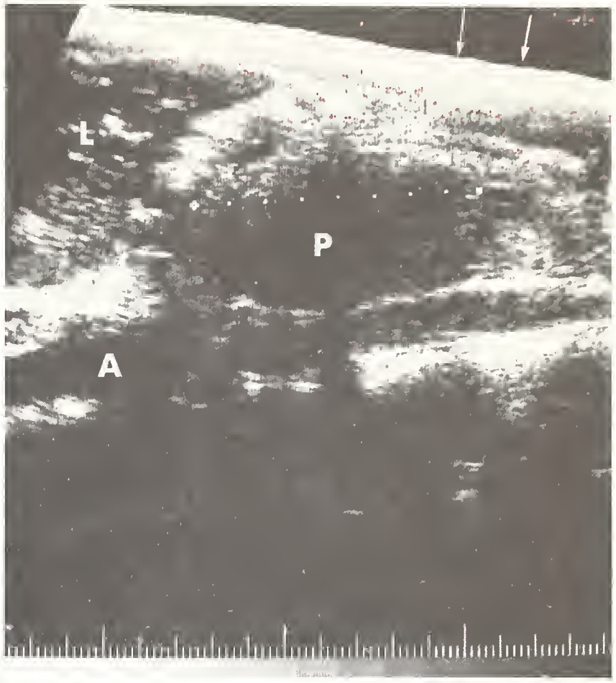


Figure 4
Pancreatic phlegmon. Longitudinal scan through the left upper quadrant demonstrates an enlargement to the pancreas (P) but with the appearances of a solid mass. The process resolved under medical therapy. (A=aorta, L=liver, arrowheads indicate anterior abdominal wall.)

The evaluation of patients with acute right upper quadrant pain generally includes both a nuclear medicine biliary tree study (e.g. $^{99m}$Tc HIDA) and ultrasonography. The radioisotope study can diagnose gallbladder disease, since visualization of the biliary tree with no activity within the gallbladder at one hour and four hours indicates acute disease. Ultrasound also can rapidly evaluate the gallbladder. Tenderness in the region of the gallbladder and ultrasonographic findings of gallbladder disease lead one to suspect acute cholecystitis. Specific ultrasonic signs for acute gallbladder disease are a double wall or gross thickening of the wall of the gallbladder; an enlarged palpable gallbladder, which is always abnormal, and, if tender, indicates acute disease; and fluid around the gallbladder, which may represent an abscess.

## Conclusions

The diagnosis of abdominal abscesses frequently requires coordinated imaging or interventional radiology. Because ultrasound is rapid and safe, it serves as an excellent initial study in this evaluation. It also is the most convenient method to guide needle aspiration whenever the abscess can be seen on the ultrasound study. Radioisotope scanning provides physiologic information which may confirm the diagnosis of disease. Computed tomography is of greatest value in those patients who are not optimally scanned by ultrasound.

REFERENCES

1. Maklad NF, Doust BD, Baum JK: Ultrasonic diagnosis of postoperative intra-abdominal abscess. Radiology 113:417-422, 1974
2. Gerzof SG, Robbins AH, Birkett DH, et al: Percutaneous catheter drainage of abdominal abscesses guided by ultrasound and computed tomography. AJR 133:1-8, July, 1979
3. Taylor KJW: Noninvasive diagnosis of abdominal and pelvic abscesses. Conn Med 42:570-573, 1978
4. Taylor KJW, Wasson JFMcI, deGraaff Ct, et al: Accuracy of grey-scale ultrasound diagnosis of abdominal and pelvic abscesses in 220 patients. Lancet 1:83-84, 1978
5. Hoffer, PB, Bekerman C, Henkin R, Edits: Gallium$^{67}$ Imaging. Wiley & Sons, New York, 1978
6. Crade M, Taylor KJW, Rosenfield AT, et al: Surgical and pathologic correlation of cholecystosonography and cholecystography. AJR 131:227-229, 1978
7. Leopold G, Amberg J, Gosnik BB, et al: Gray-scale ultrasonic cholecystography: a comparison with conventional radiographic techniques. Radiology 121:445-448, 1976

# Real-Time Ultrasonographic Evaluation of Intracardiac Infection

C. CARL JAFFE, M.D.

Although cardiac evaluation was one of the earliest medical applications of ultrasound and has been in use for more than 25 years, the diagnostic conclusions which it first permitted were frequently limited and lacked specificity. These applications were primarily directed toward the detection of pericardial effusions and mitral stenosis. The reasons for this early diagnostic limitation lay primarily in the fact that the instrumentation used a single ice pick-like beam of ultrasound to interrogate the heart and the resulting information was displayed in the form of a line tracing of cardiac structures as a function of time much like an electrocardiogram (Figure 1). Since the mid-1970's new technology has evolved using either a rapidly moving single crystal or groups of crystals able to interrogate a full two-dimensional plane of tissue in 1/30 of a second or less. This image, which bears a remarkable resemblance to actual anatomic cross-sections of the heart, is displayed on a television screen and can be recorded on videotape. The precise configuration and motion of the various valves and tissue interfaces can be faithfully followed throughout the cardiac cycle and the acoustically generated image bears a striking resemblance to standard pathologic

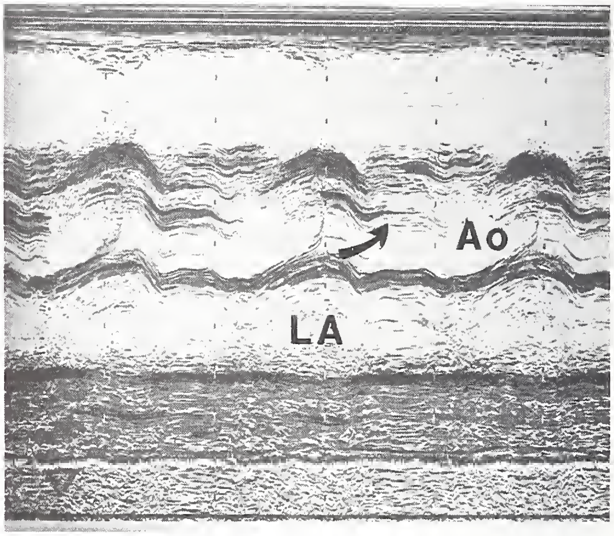


Figure 1
A time motion (M-mode) ultrasonic tracing through the region of the aortic root (Ao) and left atrium (LA) which was used prior to two-dimensional real-time techniques. This graphical display is produced by a transducer stationed on the chest wall and displays a time-related image on recording paper as the valve moves throughout the cardiac cycle. The view represents a single ice pick ultrasonic interrogation of the mediastinum. Thickening of the aortic valve during diastole (arrow) is implied in this tracing and the diagnosis of aortic stensos and/or vegetation on the valve leaflet would be considered. Compared to later illustrations, the information paucity of planar information about the valve will be appreciated when compared to two-dimensional techniques.

---

C. CARL JAFFE, M.D., Associate Professor of Diagnostic Radiology and Internal Medicine, Yale University School of Medicine.

Dr. Jaffe, received the National Institutes of Health Career Development Award 1 KO4-CA-00567 from the National Cancer Institute.

anatomy. As still-frames photographed from a dynamic television display, the illustrations that follow in this article do inadequate justice to the actual information as displayed on real-time echocardiographic equipment. Because the acoustic signal is rapidly attenuated by air-containing media, ultrasound equipment specifically designed for cardiac work usually generates a fan beam configuration with the apex of the triangle at the skin surface in order to take advantage of the small acoustic window which occurs between ribs along the parasternal border where the heart contacts the chest wall (see Figure 2).

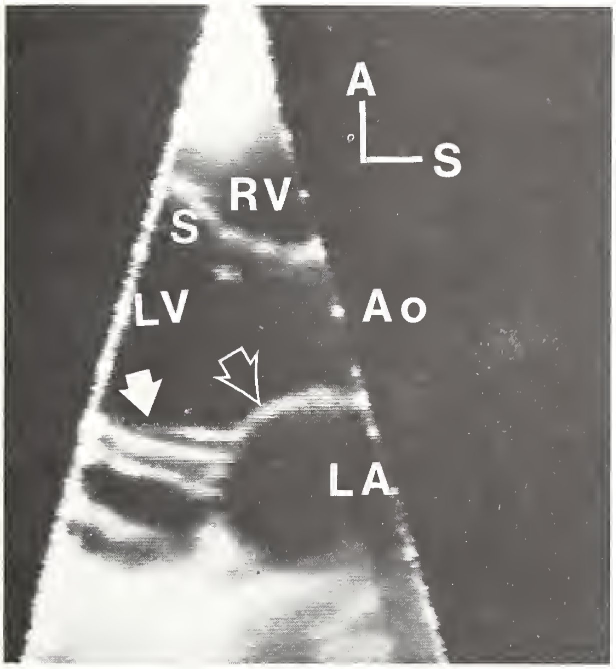


Figure 2
A single photograph frame from a video display of a two-dimensional real-time ultrasound of the heart. The apex of the triangle is at the chest wall and the superior and anterior directions are marked (S,A). The cordal attachments to the mitral valve (closed arrow) are clearly defined as linear structures attached to the mitral valve leaflets (open arrow). This plane represents a long axis view of the heart and the important structures are labeled. (RV=right ventricle, S=septum, LV=left ventricle, Ao=aorta, LA=left atrium, black arrow=left ventricular posterior wall.)

Bacterial endocarditis historically was considered almost universally fatal in the pre-antibiotic era. The clinical presentation and diagnosis is presumptively established by the presence of persistent bacteremia. In the past, the most common bacterial organisms included streptococcus, enterococcus, and staphylococcus. With the advent of antibiotics and the administration of a prolonged course of intravenous administration, substantial improvements in the five-year survival and the prevention of residual valve dysfunction have been achieved. Gradually over the last several years there has been some shift in the nature of the virulent organisms, most likely due to two major factors. The first is the implantation of a variety of prosthetic valves and foreign substances such as transvenous pacemakers which can act as a focal nidus for infection. The other is the growing numbers of individuals who are intravenous drug abusers. Their injection of contaminated material intravenously has somewhat shifted the nature of the bacterial organisms and both fungal and gram negative bacteria are more frequently found in these populations resulting in an estimated incidence of two cases of endocarditis per 1,000 addicts per year. Whereas in the general population, the left-sided valves are more commonly involved, the addict population has a higher incidence of right-sided valve involvement. Once the clinical presentation and presence of persistent bacteremia have been established, further imaging techniques are highly advantageous to attempt to locate vegetations on the valve structures as well as evaluate the hemodynamic function of the heart itself. For these particular problems, the traditional techniques of auscultation, chest xray, and even angiography are hardly sufficient and substantially insensitive. The ultrasonic image carries a remarkable advantage to even angiography since the signals creating the image are reflections from the internal cardiac structures themselves surrounded by blood which is generally non-reflective and returns no significant signal. Angiography, on the other hand, attempts to fill the blood-containing spaces within the heart and therefore the valves and small abnormalities which might lie on the valves are often obscured and buried within the contrast material required for the visualization of the cardiac cavity.

The two-dimensional ultrasonic imaging plane which is wedge-shaped is extremely versatile and can be turned, angulated, and pointed to display virtually all of the important internal cardiac structures and permits both longitudinal and "en face" views of the valves and valve orifices (see Figure 2, 3, 4). The normal valve structures are thin and delicate and have a highly predictable pattern of motion throughout the cardiac cycle. Intercavitary dimensions and patterns of motion of the myocardium are by now well established and predictable. Deviation from these standard appearances are used to establish the presence of pathology even for problems unrelated to endocarditis (see Figure 5).

Any process which disturbs the normal delicate configuration of the intracardiac valves can be presumed to be abnormal and provides grounds for suspecting the presence of a vegetation. Deposition of fibrocalcific change particularly on the aortic valve leaflets and mitral annulus of the aging adult can present a diagnostic dilemma; however, these appearances are frequently distinguishable from vegetations since calcium tends to stiffen the valve, whereas vegetations have the appearance of cauliflower-like excrescences along the surface of the valve which are

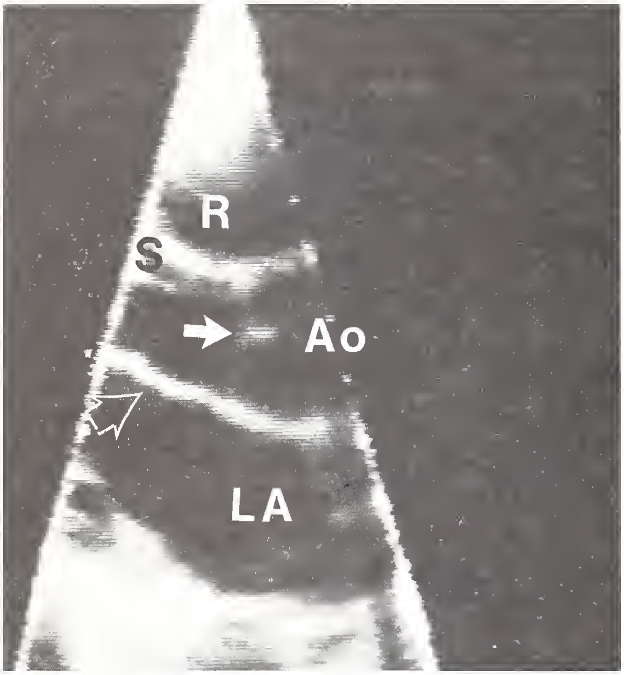


Figure 3
Still frame along the long axis of the aortic root angulated slightly more cephalad from Figure 2. The coaptation of the aortic valve leaflets is clearly defined in cross section (closed arrow). The anterior leaflet of the mitral valve (open arrow) is seen to insert at the base of the aortic valve. The other important structures are labeled. (R=right ventricle, S=septum, Ao=aortic root, LA=left atrium.)

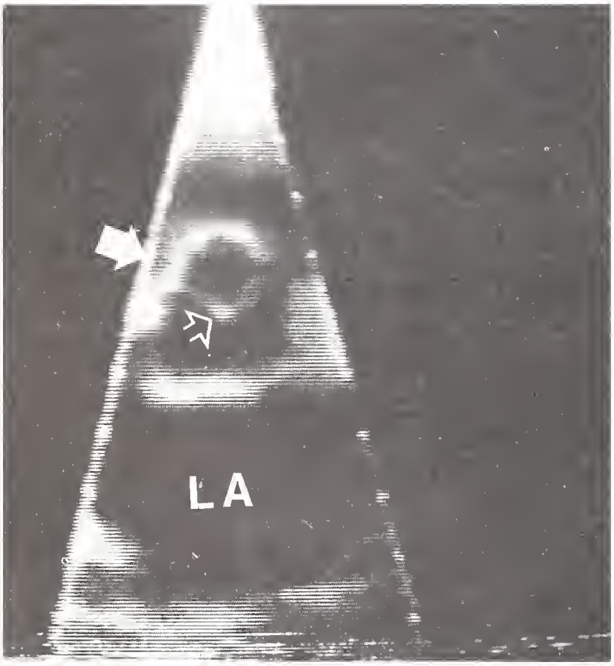


Figure 4
Still frame of the aortic valve in an "en face" view which is perpendicular to the plane of Figure 3. A circular aortic valve annulus (closed arrow) is clearly seen and the "Y" configuration of the closed position of the three aortic valve leaflets are clearly seen and the margins are delicate (open arrow). (LA=left atrium.)

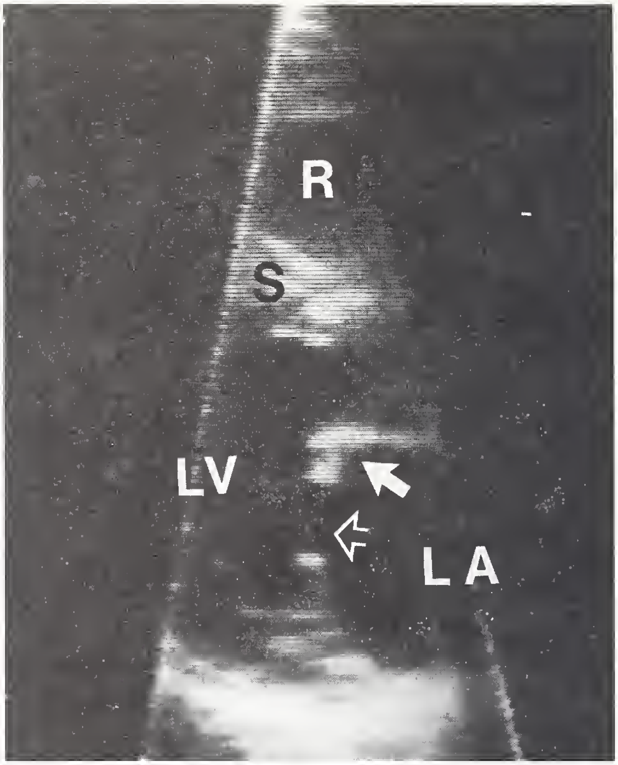


Figure 5
Still frame of the long axis view of the mitral valve leaflets in the open position during diastole. The knee configuration assumed by the anterior leaflet during this phase of the cardiac cycle (closed arrow) is characteristic and highly diagnostic of mitral stenosis. The mitral orifice (open arrow) is restricted and limits the rate of flow of blood from the left atrium (LA) to the left ventricle (LV). (R=right ventricle, S=septum.)

highly mobile and often flutter throughout the cardiac cycle (see Figure 6).

The two-dimensional echo technique permits specific planes of views for each of the four intercardiac valves, and the same consideration of a thickened globular mass remains the primary diagnostic finding for diagnosing a vegetation (see Figure 7). Once identification of abnormality is made, real-time ultrasonography also provides a convenient, non-invasive examination of negligible risk for the repeated examination and follow-up of this lesion. At times, vegetations have been seen to disappear from valves after embolic phenomena occur. The greatest remaining problem in accurate assessment of endocarditis remains the patient who has undergone valve replacement by a prosthetic valve. The materials used for the construction of a prosthetic valve contain metal and plastic elements which are highly reflective and create strong signals on the ultrasonic image. These signals easily obscure small globular echoes which might be simultaneously present and impair early diagnosis and follow-up of endocarditis in these patients who unfortunately are at increased risk of infection.

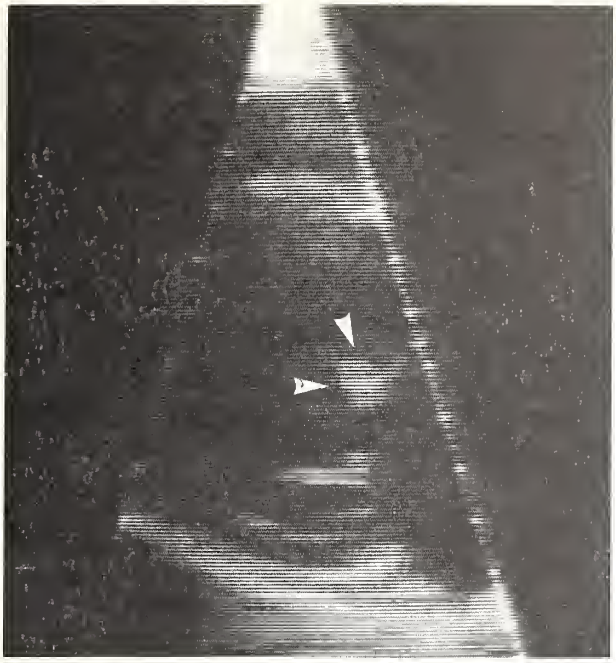


Figure 6a
Still frame long axis view of both mitral leaflets during diastole. A globular, highly mobile structure lying at the tip of the anterior leaflet (arrow heads) is diagnostic of a verruca.

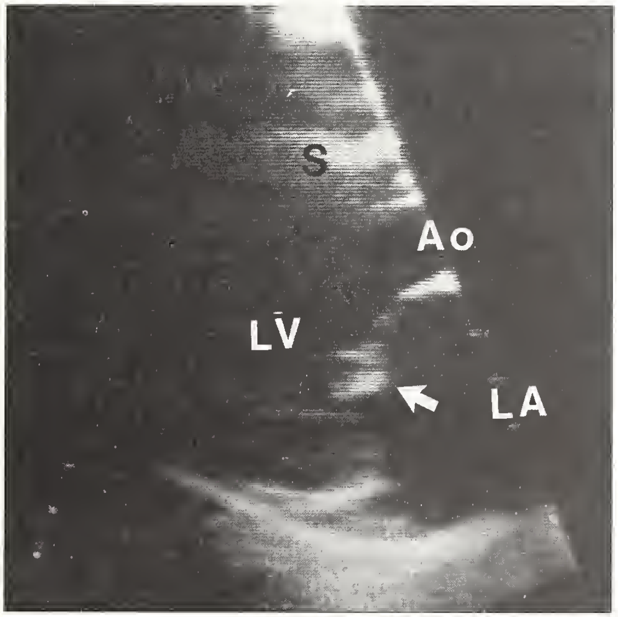


Figure 6b
The same view as Figure 6a during the systolic phase shows the vegetation (arrow) is mobile and tends to drop back into the left atrium (LA) from the left ventricle (LV). This extra structure attached to the mitral valve without restricting valve motion is clearly abnormal and may persist as a fibrotic structure even after successful medical therapy. The septum (S) and root of aorta (Ao) are also labeled.

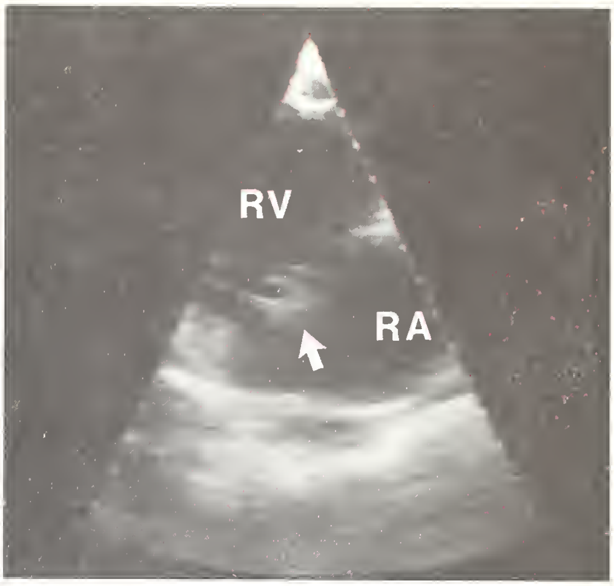


Figure 7
Long axis view of the right ventricle (RV) and right atrium (RA) showing the profile of the tricuspid valve which possesses a large globular reflective structure pathognomonic of a vegetation (arrow) in this drug addict. In addition to directly visualizing the vegetation, this technique also permits an assessment of valve function which in this case showed prolapse of the valve into the right atrium during systole indicating rupture of the chordal structures attached to the valve.

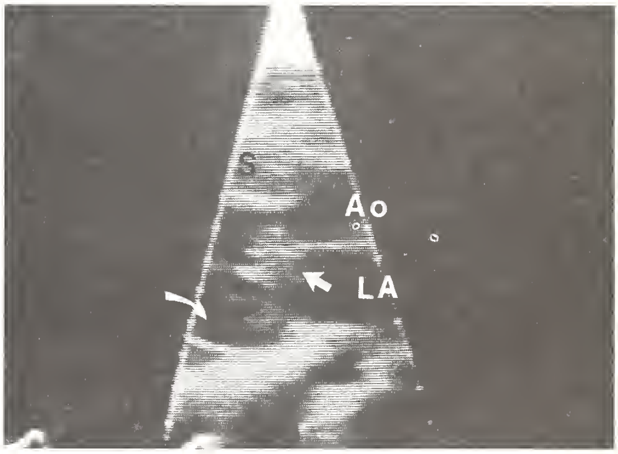


Figure 8
Not infrequently, a vegetation of the intracardiac valve such as is seen here on the mitral leaflet (arrow) is accompanied by diagnostic issues that are of significant importance to the diagnostician in addition to the finding of endocarditis. Here the interventricular septum (S) is markedly thicker than the left ventricular posterior wall (curved white arrow). This finding combined with a characteristic systolic anterior motion of the mitral valve confirms the simultaneous presence of idiopathic hypertrophic subaortic stenosis. (Ao=aorta, LA=left atrium.)

The ultrasonic image not only offers the capacity to evaluate valves and myocardial structures for infectious processes but also permits a wide variety of important diagnostic entities which may co-exist with vegetations (see Figure 8 and 9). In the presence of a clinical presentation of suspected bacterial endocarditis, the sonographer must employ meticulous technique to examine all portions of the valve from various angles of view. The absence of finding a globular density lying on the valve structures or myocardium of course cannot be considered an absolutely firm negative since the clinical presence of persistent bacteremia must provide overriding criteria for treatment-purposes. Small sources of microbe-seeding of the blood stream will undoubtedly continue to evade diagnostic localization, and the incomplete sensitivity of the ultrasound technique should not be considered a discouraging or sufficient reason for not pursuing the opportunity to examine these cases.

Two-dimensional ultrasonography now provides a diagnostic imaging cornerstone that provides increased sensitivity and accuracy compared to previous linear graphic techniques. Although the procedure requires operator experience and a recognition that the presence of prosthetic valves and substantial calcification of a valve may impair diagnostic accuracy, nevertheless as an imaging modality it clearly rates in the first rank for the opportunity of localizing the intracardiac source of obscure infection.

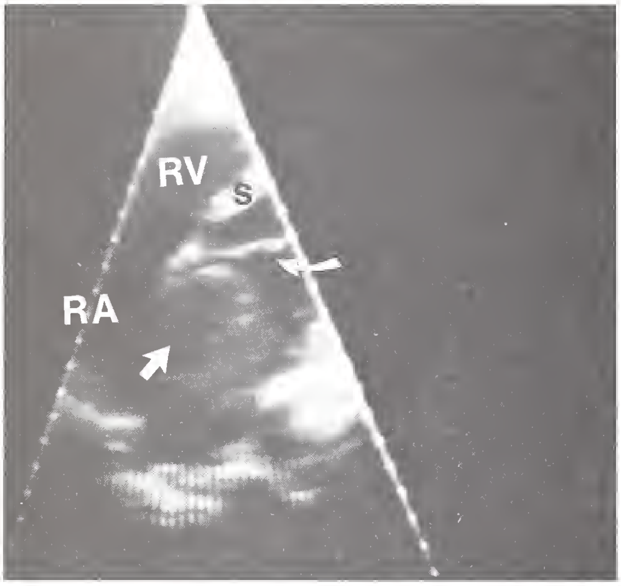


Figure 9
In addition to vegetations, other masses can occur within the cardiac chambers and include such entities as clot and tumor. Here an angulated view of heart displaying the atrial chambers from an apical approach shows a large atrial myxoma (straight arrow) lying posterior to the mitral valve (curved arrow). This diagnosis is not easily confused with vegetations and is highly specific and diagnostic (RV=right ventricle, RA=right atrium, S=septum.)

# Use of Gallium-67 in the Diagnosis of Occult Infections

PAUL B. HOFFER, M.D.

Gallium-67 (GA-67) was initially introduced as a tumor-scanning agent by Edwards and Hayes in 1969.[1] Littenberg and associates[2] were the first to popularize its potential use as a method for diagnosing occult infection. Gallium is a group $\text{III}_B$ transition metal that resembles the ferric iron in numerous of its physical properties. The major differences between gallium and iron are a) the inability of gallium to be reduced from the +3 oxidation state to the +2 state in vivo and b) the slightly lower affinity of gallium for iron-binding proteins as compared to iron itself.

## Mechanisms of Gallium Uptake and Infection

When Ga-67 citrate is injected intravenously, the gallium is rapidly bound by transferrin. While there is still some debate about the exact mechanism by which Ga-67 then enters into areas of inflammation, we do have a good general understanding of the important mechanisms of localization.

The Ga-67-transferrin complex gains access into inflammatory tissue to some extent through the leaky endothelium of vessels at sites of inflammation.

In addition, Ga-67 binds to a limited extent to circulating neutrophils.[3] Although it was once believed that this leukocyte-binding was a major pathway by which Ga-67 was transmitted to the site of infection, it is now thought that this mechanism plays a relatively minor role.[4]

Neutrophils do play a major role in Ga-67 localization at site of inflammation; the mechanism, however, is indirect. Leukocytes migrate to inflammatory lesions and subsequently deposit iron-binding proteins into the exudate around lesion. One of the most important of

---

PAUL B. HOFFER, M.D., Professor of Diagnostic Radiology; Director, Section of Nuclear Medicine, Yale University School of Medicine.

these proteins is lactoferrin. Lactoferrin is known to bind Ga-67 and is capable of stripping Ga-67 from its transferrin complex.[5] Lactoferrin also binds to the surface of inflammatory cells, such as macrophages. Thus, much of the Ga-67 present in inflammatory tissues arrives in the transferrin-bound state and is subsequently incorporated into the site of inflammation by binding to lactoferrin which, in turn, is bound to local inflammatory cells.

Microorganisms which produce infection are also capable of direct incorporation of Ga-67.[6] This direct method of uptake of Ga-67 is probably mediated by the interaction of siderophores, small iron-binding molecules which are used by infectious organisms to acquire ferric ion.[7] The siderophores appear to mistake Ga-67 for their normal ferric ion substrate. Once the Ga-67 is incorporated into the microorganism, it cannot be released.

## Imaging Techniques

When Ga-67 was first introduced into clinical nuclear medicine in the early 1970s, the imaging equipment then available was poorly suited for imaging this radionuclide. Problems included nonavailability of both appropriate collimators and instruments capable of recording the multiple energy photons emitted by Ga-67. These problems have been solved to a great extent by production of appropriate collimators and imaging instruments which have multiple energy windows. The best instruments currently available for imaging Ga-67 include the Pho-Con Tomographic scanner or large field camera with dual or triple energy windows. Commonly, a dose of between 3 to 6 mCi of Ga-67 citrate is administered intravenously. An effort is made to clean the bowel since Ga-67 will normally accumulate to some extent in the gastrointestinal tract. Bowel-cleansing includes the use of cathartics and enemas, when needed. Occasionally, clinical considerations will prevent such vigorous bowel preparation. Even under these circumstances however it is worthwhile to perform the imaging procedure since bowel activity is highly variable and some patients will demonstrate no bowel retention of Ga-67 in spite of complete absence of preparation.

While some investigators have advocated imaging of Ga-67 as soon as six hours following intravenous injection of the radionuclide,[8] we feel that a minimum of 24-hour delay is required between injection and imaging in order to achieve good diagnostic images. Our usual custom is to perform a scan at 24 hours following radionuclide injection and to repeat studies as necessary in areas of concern. Our only modification of this procedure is for evaluation of the lung and kidney where faint uptake at 24 hours may be seen in the absence of disease. When a lesion is suspected in either of these organs a scan at 48 hours is preferred.

## Clinical Applications

*The abdomen.* The sensitivity and specificity of Ga-67 imaging for evaluation of intraabdominal abscess is well documented.[9] The sensitivity and specificity are both approximately 90%. Gallium-67 is capable not only of identifying abscesses but also areas of peritonitis as well as sites of cellulitis. Both CT scanning and ultrasound are at least equally sensitive for detection of formed abscesses. In fact, when a formed abscess is suspected and the clinical location is known, ultrasound is probably the perferred technique. Gallium-67 is most useful in evaluating patients a) in whom the specific location of the abscess has not been identified, b) if it is not known whether the inflammatory lesion is formed, e.g., abscess or not well localized, e.g., peritonitis or c) where some aspect of the patient's anatomy or previous surgical or other intervention prevents use of other imaging modalities.

Gallium-67 scanning is capable of detecting abscesses even if the patient is receiving antibiotic therapy. The role of steroids in inhibiting Ga-67 localization in inflammatory lesions is somewhat less clear. Generally, concurrent use of steroids has not represented a problem in identification of intraabdominal abscesses with Ga-67 although it has been suggested as a possible cause for poor localization in certain other sites, including bone. Steroid effects on Ga-67 localization may be dose-related.

While the Ga-67 scan frequently is adequate in identifying the location and nature of the inflammatory lesion, it is often helpful to use either ultrasound examination or computed tomography as an adjunct in further defining the anatomic aspects of the lesion in anticipation of drainage.

We also feel it is important that these procedures not be considered competitive. If there is a strong suspicion of infection based on clinical considerations, then a single negative study should not be considered to have ruled out infection. It may be desirable to simultaneously obtain computed tomograms, ultrasound, and Ga-67 scans since none of these methods is infallible and early detection of a lesion may be critical to the patient's prognosis. In spite of the relative success of Ga-67 in detecting occult intraabdominal sites of infection, 10% of such lesions are missed by gallium scan. Retrospective analysis of these cases reveals that in approximately half (5% of total) the lesions did take up Ga-67 but uptake was mistaken as either normal hepatic or normal gastrointestinal activity. In the other half, (5% of total) the Ga-67 did not localize within the lesion.

## Bone and Joint Infections

Gallium-67 is extremely sensitive in detection of acute osteomyelitis.[10] Usually, however, the diagnosis of osteomyelitis can be made based on the $^{99}$Tc-phosphate bone scan. We strongly recommend that the bone scan be performed first in the evaluation of acute osteomyelitis or joint infection. There is, however, a significant incidence (approximately 10%) of false-negative bone scans in acute osteomyelitis and joint infections. It is in these cases where Ga-67 imaging is most useful. Our customary approach to detection of suspected osteomyelitis is to obtain bone radiographs (which are usually normal) and bone scan of the region of suspected infection. In children, we also obtain a total-body bone scan since multiple sites of bone infection are not uncommon. If the clinical symptoms are strongly suspicious and the bone scan is negative, we do not consider the diagnosis of osteomyelitis to have been excluded. Under these circumstances we recommend a Ga-67 scan or, if clinically warranted, surgical intervention. It has been our clinical experience that acute osteomyelitis is virtually ruled out by a negative Ga-67 scan.

Chronic osteomyelitis represents a more confusing problem. Here the bone scan is almost inevitably positive but the significance of a positive bone scan, ie, whether it is due to previous bone injury or represents acute change is difficult to determine. The Ga-67 scan may be extremely helpful in demonstrating that an active inflammatory process is present. Of particular significance is a disparity in the appearance of the Ga-67 scan compared to the bone scan.[11] Unfortunately, some patients with chronic osteomyelitis may have negative Ga-67 scans and therefore the gallium scan cannot be considered as sensitive in detection of chronic osteomyelitis as in the detection of acute osteomyelitis.

### Pulmonary Lesion

While Ga-67 uptake in acute inflammatory lesions of the lung is highly reliable as an indicator of disease, the chest x-ray obviously plays the preeminent role in diagnosis of pulmonary infection. Gallium-67, however, may be very useful as a secondary mechanism of confirming such lesions or evaluating and distinguishing between inflammatory and noninflammatory lesions. Gallium-67 has been used, for instance, in the clinical staging of patients with idiopathic pulmonary fibrosis.[12] It also appears to be useful in distinguishing pneumonia from pulmonary infarction. Areas of pneumonia invariably are associated with increased Ga-67 uptake while areas of infarction show no uptake unless secondarily infected.[13]

Perhaps most importantly, Ga-67 has also shown to be useful in the diagnosis of pneumocystis carinii infections in compromised hosts.[14] While the finding of Ga-67 uptake in the lung may be nonspecific, the chest radiograph in such patients is frequently normal and the Ga-67 scan may be sufficient indication to obtain pulmonary biopsy in the appropriate clinical setting.

### Urinary Tract

Gallium-67 imaging is also a highly sensitive method of detection of pylonephritis;[15] however, the diagnosis can usually be made by simpler and less expensive methods. Nonetheless there are occasional cases of pylonephritis where the diagnosis may be obscure and Ga-67 imaging may be helpful. A more important application of Ga-67 imaging in urinary tract infection is the detection of acute focal bacterial nephritis.[16] This condition may masquerade as either renal tumor or abscess. The chief value of the Ga-67 scan in this condition is to demonstrate more extensive renal involvement than is suggested by ultrasound or nephrotomography.

Gallium-67 imaging may also be useful in diagnosis of a variety of other nonspecific inflammatory conditions. Its chief drawbacks are the requirement of a 24-hour delay between injection and imaging, occasional confusion between Ga-67 localization in a lesion and normal uptake in either liver, gut or bone, its failure to differentiate between malignant and benign disease, and the small but nonetheless significant incidence of false negative studies.

Other radionuclide methods have been advocated to improve the specificity and sensitivity of the Ga-67 scan. The chief amongst these is Indium-111 labeled leukocytes. Preliminary clinical studies as well as animal studies performed using this agent are extremely encouraging.[17] However, the method is still technically involved, requiring separation of the leukocytes from the blood prior to labeling. Until this method has been further refined, Ga-67 will remain a useful diagnostic study in the detection of occult infection.

### REFERENCES

1. Edwards CL, Hayes RL: Tumor scanning with $^{67}$Ga citrate. J Nucl Med 10: 103-105, 1969
2. Littenberg RL, Taketa RM, Alazraki NP, et al: Gallium-67 for localization of septic lesions. Ann Intern Med 79: 403-406, 1973
3. Burleson RL, Holman BL, Tow DE: Scintigraphic demonstration of abscesses with radioactive gallium labeled leukocytes. Surg Gynecol Obstet 141: 379-382, 1975
4. Tsan M-F, Chen WY, Sheffel U, et al: Studies on gallium accumulation in inflammatory lesions: I. Gallium uptake by human polymorphonuclear Leukocytes. J Nucl Med 19: 36-43, 1978
5. Hoffer PB, Huberty JP and Khayam-Bashi H: The association of $^{67}$Ga and lactoferrin. J Nucl Med 18: 713, 1977
6. Menon S, Wagner HN Jr, Tsan MK-F: Studies on gallium accumulation in inflammatory lesions: II. Uptake by Staphylococcus aureus: Concise Communication J Nucl Med 19: 44-47, 1978
7. Emery T, Hoffer PB: Gallium, a competitor of iron in microbial transport systems. J Nucl Med 21: 935-939, 1980
8. Hopkins GB, Mende CW: Gallium-67 and subphrenic abscesses - is delayed scintigraphy necessary? J Nucl Med 16: 609-611, 1975
9. Hoffer PB: Gallium and infection. JNM 21: 484-488, 1980

10. Handmaker H, Giammona ST: The "hot joint" - increased diagnostic accuracy using combined $^{99}$Tc-phosphate and $^{67}$Ga citrate imaging in pediatrics. J Nucl Med 17: 554, 1976

11. Lisbona R, Rosenthal L: Observations on the sequential use of $^{99m}$Tc-phosphate complex and $^{67}$Ga imaging in osteomyelitis, cellulitis and septic artiritis. Radiology 123: 123-129, 1977

12. Line BR, Fulmer JD, Reynolds HY, et al: Gallium-67 citrate scanning in the staging of idiopathic pulmonary fibrosis: Correlation with physiologic and morphologic features and broncho-alveolar lavage. Am Rev Resp Dis 118: 335-365, 1978

13. Niden AH, Mishkin FS, Khurana MML, et al: $^{67}$Ga-lung scan: An aid in the differential diagnosis of pulmonary embolism and pneumonitis. J AMA 237: 1206-1211, 1977

14. Levenson SM, Warren RD, Richman SD, et al: Abnormal, pulmonary gallium accumulation in P. Carinii pneumonia. Radiology 119: 395-398, 1976

15. Kessler WO, Gittes RF, Hurwitz SR, et al: Gallium-67 scans in the diagnosis of pyelonephritis. West J Med 121: 91-93, 1974

16. Rosenfield AT, Glickman MG, Taylor KJW, et al: Acute focal bacterial nephritis (acute lobar nephronis). Radiology 132: 553 561, 1979

17. Thakur ML, Coleman RE, Welch MJ: Indium-111 labeled leukocytes for the localization of abscesses: Preparation, analysis, tissue distribution and comparison with gallium-67 citrate in dogs. J Lab Clin Med 89: 217-228, 1977

# Computed Tomography Evaluation of Abscesses

C. CARL JAFFE, M.D.

In the evaluation of patients suspected of harboring obscure infections, computed tomography has come to play an increasingly important, and in some circumstances, a primary role in localization. The clinical drive for accurate localization arises from the observation that the inadequately or inappropriately treated patient is placed in a high mortality risk group. Moreover, there has been a significant change in the nature of the clinical presentation of occult infection in the past few decades. In the past, abscesses were characterized by a more acute course and clinically apparent localization, often found by mere palpation. Currently, it is not unusual to find a more subacute or indolent course due to partial treatment with empirically administered antibiotics or inadequate immune defenses in the compromised host as is seen in patients on steroids or cytotoxic drugs. In addition, incomplete or inadequate therapy can more commonly be found where the infection is due to antibiotic-resistant nosocomial microbes. The use of imaging technology serves not only to locate the occult infection and provide some indication of its extent, but also serves to provide the option for surgical drainage where appropriate.

Computed tomography as an imaging technique has only been available in the past seven years and its use for the diagnosis of general body imaging has only been possible in the last five. During that time, there has been rapid technological improvement in the instrumentation and correspondingly a developing but increasingly secure sense of diagnostic accuracy for entities such as abscesses. The major consideration which prevented its early and immediate application to this diagnostic problem was caused by the prolonged time of single image creation (5 minutes for the first scanners) and the difficulties in handling critically ill patients. The long imaging-times resulted in poor image quality because of patient motion and breathing-artifacts. Intense commercial competition has resulted in rapid technological advances which shortened the 5-minute scan time first to 2½ minutes, then to 20 seconds and now to less than 5 seconds per image for what are classified as modern third and fourth generation scanners. The sub-5-second scan time permits images to be created while breath-holding and has substantially reduced artifacts while markedly improving image clarity. Since each image represents an axial slice one cm. or less in thickness through the body, a complete examination of the abdomen may entail 30 images, and therefore total examination-times greater than 30 minutes per case are still generally the rule. Because of the

---

C. CARL JAFFE, M.D., Associate Professor of Diagnostic Radiology and Internal Medicine, Yale University School of Medicine, Department of Diagnostic Radiology.

substantial examination-time, the relative expense of the examination, and the fact that the equipment is not yet possessed by all hospitals, widespread use and experience with this technique is still somewhat limited.

It is important to point out that computed tomography is essentially a radiographic technique in which an X-ray tube radiates the body, and X-ray detector absorbs and counts the radiation flux, and an elaborate mathematical process generates a computer-displayed image. That image, a thin axial slice of the patient examined, represents the radiologic attenuation values (correlated with electron density of tissue) on a mm. by mm. basis across the face of that cross-section of the body. The clinician must realize that although the instrumentation makes possible very fine distinctions between the absorption coefficient of tissues within the body, nevertheless, the imaging cannot necessarily discriminate between adjacent tissues of similar electron density. This has important diagnostic implications which will be explained below. The capacity of computed tomography to make accurate diagnoses depends on a variety of technical factors which include: scan speed, resolution (spatial and contrast), axial slice thickness, and interimage distance. Reliable use of computed tomography for the diagnosis of obscure infections requires that each of these factors be optimized. As a general rule this requires that the machine to be one of the most modern generation instruments.

Although the axial image plane was at first unfamiliar, computed tomography gained ready acceptance among radiologists because the image generated bears such close resemblance to the configuration of pathologic anatomy. Tissue planes as defined by muscle, fat and bowel can be easily identified (see Figure 1). Moreover, as a radiographic technique, computed tomography benefits from the capacity to use the variety of radiographic contrast materials which have a long tradition of use. This includes: oral or rectal barium, intravenous iodinated compounds, and air introduced into the bowel or bladder (see Figure 2). In many circumstances, the use of these compounds can provide telling diagnostic information which is virtually unobtainable by alternative imaging techniques. Early computed tomographic investigators proposed a variety of findings felt to characterize abscess.[1,2,3,4,5,6] These included: a mass with extraluminal gas, a central low density, a rim surrounding a central low density and destruction of tissue planes. Unfortunately, these properties are not exclusively found in abscesses and deserve further explication.[3]

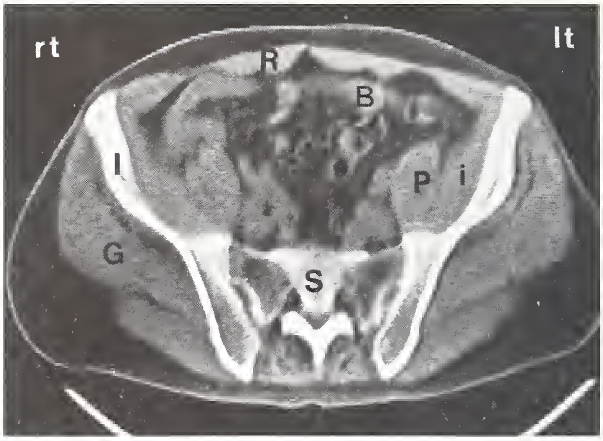


Figure 1
CT scan of a normal pelvis. The sacrum (S) and ilium (I) are clearly defined since the technique shows both bony and soft tissue structures with equal ease. The gluteal muscles (G) are separately identifiable. Anteriorly the rectus muscle (R) and the intra-abdominal bowel (B) are easily discerned. Note the symmetry of the psoas (P) and iliacus (i) muscles. On this and all illustrations that follow, the patient's right and left are as indicated in this figure (rt, lt).

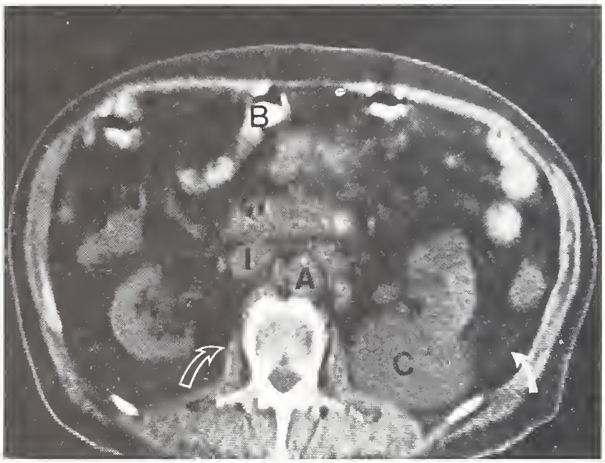


Figure 2(a)
Compared to Figure 1, air fluid levels within the abdomen can be identified within bowel because oral contrast material was administered and is displayed as a high attenuation value shown here as white (B). This scan is at the level of the kidneys and notice the asymmetry due to a mass in the left kidney (C). The aorta (A) and vena cava (I) are clearly and separately definable in the retroperitoneum. Tissue discrimination by this technique is so precise that even thin tissue layers within the retroperitoneal fat are clearly visible (closed arrow). Note the symmetry of the psoas muscles lying lateral to the spine (open arrow).

One of the most important abnormal findings seen in viewing any single image in computed tomography is the presence of a soft tissue mass which defies normal anatomic planes or cannot be explained as a normal organ. In the retroperitoneum, symmetry is an important normal diagnostic property and when violated, is a sure sign of pathology (see Figure 3). Abnormal masses, even if obvious, cannot necessarily be specifically identified as infectious on the basis of computed tomographic information if their sole property is that of mass. Tumors, seromas, cysts and hematomas (see Figures 2 and 4), like abscesses, may present as masses with regions of low radiographic attenuation (represented as a darker area on the computed tomographic image). Although not entirely specific, the vascularity of the capsule, which frequently encloses an abscess, can be used to advantage since the rapid injection of intrave-

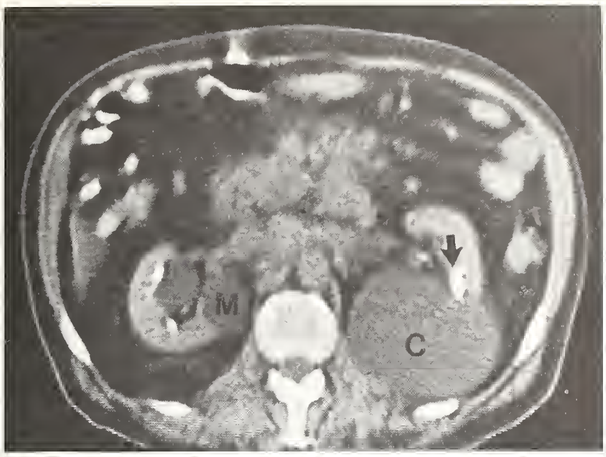


Figure 2(b)
In order to better evaluate the left renal mass, intravenous iodinated contrast material can be administered which is excreted by the kidneys. The same patient as Figure 2(a) now shows both kidneys have increased in density and the collecting systems are outlined by iodine (arrow). The left renal mass (C) and now a right renal mass are visible (M) and have not increased in value after intravenous contrast suggesting that the structures are avascular and most likely represent cysts.

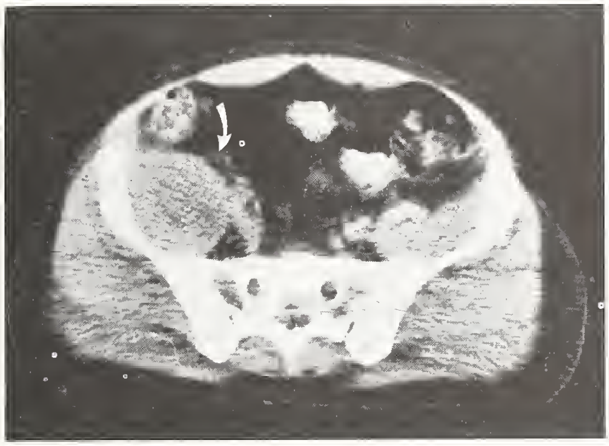


Figure 3
CT scan through the pelvis in a patient suspected of abscess shows the obvious asymmetry of the iliopsoas region on the patient's right (arrow) with a central low density compared to the corresponding normal musculature on the patient's left. The abnormality was first identified by computed tomography and was confirmed at surgery as a right psoas abscess.

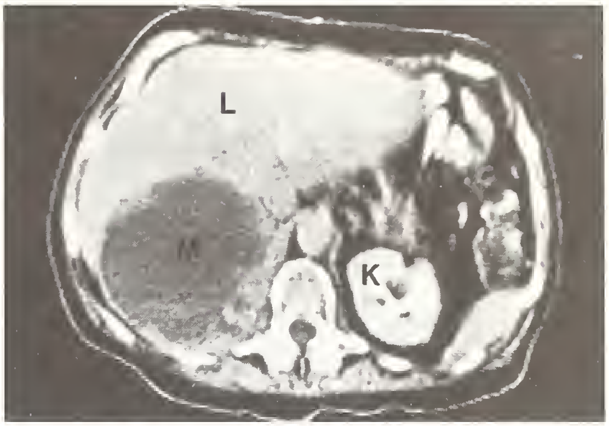


Figure 4
CT scan through the upper abdomen shows the liver (L) and left kidney (K). Intravenous contrast material has been injected and is seen in the collecting system of the left kidney. A large, low density region (M) is seen in the posterior portion of the liver. At surgery, this was found to be a large necrotic metastatic tumor and illustrates that low density alone is not specific for either cyst or abscess but inlcudes tumor, hematoma and seroma.

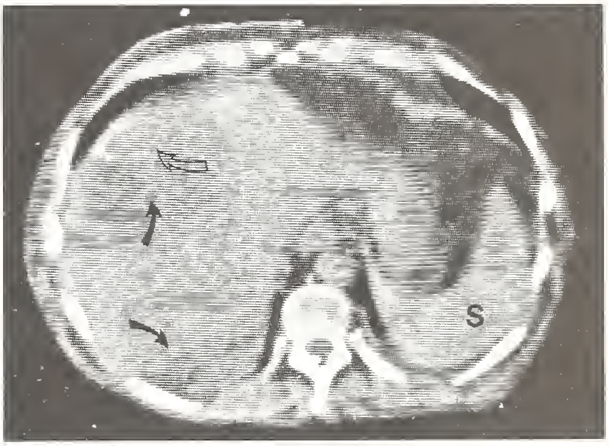


Figure 5
CT scan of the upper abdomen in a patient with carcinoid tumor metastatic to liver. The spleen (S) is noted on the left. The liver displays several large, low density regions (closed arrow). With the injection of contrast material, a rim-like structure was apparent (open arrows). This isolated rim along with a septic clinical picture suggested that not only metastases but most likely abscess was present within the liver. This was confirmed by later drainage (see Figure 7).

nous iodine will occasionally create a rim-like effect surrounding a low density lesion (see Figure 5). Since the original descriptions, it has been recognized that this rim enhancement can be possessed by neoplastic processes and, therefore, although the computed tomographic identification of abnormal pathology is without question, the identification on the grounds of rim enhancement is not necessarily specific of abscess.[3]

The one finding on computed tomography which is possessed by abscesses alone is that of extraluminal gas. The presence of gas within the computed tomographic image can be securely identified by its very low attenuation number, unshared by any other anatomic material. It is important, however, to recognize that gas is normally present in the abdomen so long as it lies within the bowel and is present for a given period of time in non-bowel tissue after surgery. As a general rule, the presence of localized intra-abdominal non-bowel gas more than 7 - 10 days after surgery can be considered presumptively abnormal unless irrigated drains have been left in place. The presence of a mass containing gas in an area where bowel is not normally found, such as the retroperitoneum, is prima facie evidence for abscess. In some circumstances, for objects within the intra-abdominal space, an air-containing structure may be difficult to identify as either bowel or non-bowel in nature. Under those circumstances it behooves the radiologist to make repeated efforts to reimage the area after the patient has ingested copious quantities of oral contrast material so as to flood the small bowel and colon. Persistence and careful technique where axial slices are obtained without skip areas throughout the full extent of the abdomen are usually rewarded (see Figure 6).

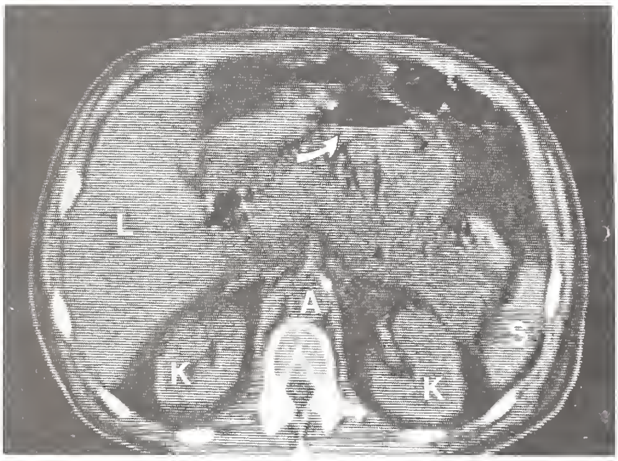


Figure 6
CT scan of the upper abdomen demonstrating both kidneys (K), tip of spleen (S), liver (L) and aorta (A). At this anatomic level, the structure anterior to the aorta can be identified as pancreas which was dotted with several air containing spaces as well as a major air fluid level (arrow) which did not fill with contrast when administered orally and was therefore identifiable as lying within the lesser sac. A lesser sac abscess accompanying pancreatitis was found at surgery.

The destruction of tissue planes where an orderly arrangement of organs is expected is an important directing sign to the presence of inflammatory disease but raises the further complication of distinctions to be made between phlegmon and abscess. In order for tissue planes to be clearly defined, the patient must possess at least a minimal amount of fat separating the various intra-abdominal organs. The patient's weight alone is not a sufficient indicator of the probable presence or absence of the minimal fat planes which help to optimize the CT image. Cachexia, however, is not infrequently accompanied loss of fat planes between organs and, therefore, the sensitivity for identifying inflammatory destruction of these planes in these patients is sometimes impaired. A mass-effect and destruction of tissue planes alone is a finding that can be possessed by both phlegmon and abscess and presents a particularly common problem in inflammations of the pancreas where infection may be superimposed. Under these circumstances, the infected tissue is brawny in nature and cannot be adequately drained by surgical or other techniques.

The presence of extraluminal air provides sufficient evidence for separation of these two diagnoses and the presence of gas permits greater security in the recommendation for drainage procedures. Although computed tomographic technology evolved primarily as an axially directed image, recent advances have permitted increasing versatility of image display. One substantial advance has occurred in the mathematical integration of multiple axial slices to create new planes visible through the body. Under these circumstances (called multiplanar reconstruction), sagittal, coronal or arbitrary planes of view can be constructed and displayed from a series of adjacent axial images within the computer's memory.

One further advance which is likely to gain increasing attention is the use of computed tomography as an imaging device for first localizing an abscess and then, in the appropriate patients, directing a needle and appropriate drainage tubes into the abscess cavity. Unlike alternative directed imaging techniques, computed tomography has the substantial advantage of being able to discriminate the tissue density characteristic of the abscess while at the same time imaging and directing the needle tip to the center of interest.[7,8] Flexible needles with adequate safety margins act as a guide for the sequential placement of a larger drainage tube (see Figure 7) in those patients who present too great a risk for direct surgical drainage.

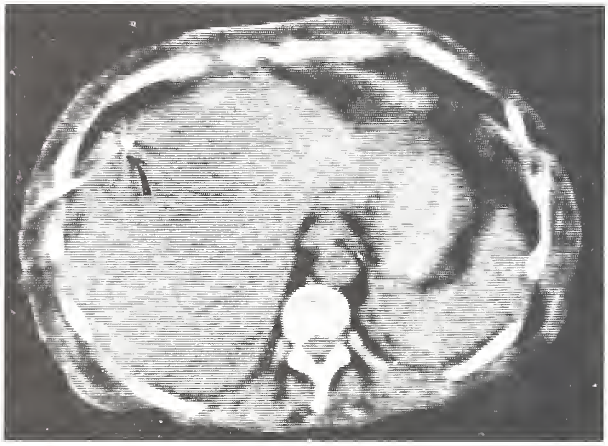


Figure 7
CT image of the same patient and in the same plane as Figure 5. The linear density passing through the skin and terminating within the liver (arrow) is a drain inserted using computed tomographic image guidance of a sequential catheter technique which followed localization and partial drainage of the abscess by a skinny diagnostic needle.

In the search for occult infection, computed tomography must overcome the diagnostic problems outlined above. Computed tomography has difficulty with the uncooperative patient or a patient totally lacking in normal fat planes separating the organs of the abdomen. Gas in bowel and unlabeled bowel must be carefully discriminated from pathologically significant structures within the abdomen. However, meticulous technique and patience can substantially mitigate these problems.

As with alternative imaging techniques, the immediate postoperative state can be particularly problematic since at that time extraluminal air cannot be used as a specific pathologic marker for abscesses.[5] In addition, the surgical use of metal clips for vascular stasis is capable of creating uniquely disturbing artifacts on computed tomography which compromise the image quality and make the diagnostic task more difficult.

On the other hand, computed tomography has substantial advantages over the other alternatives and offers unique insight in the search for abscess. The advantages include: (1) An image that is substantially independent of operator skill, (2) An image that is reproducible and progressively incrementable along the body's axis to provide total image coverage of an area of interest without inadvertent skip areas, (3) Contrast techniques using both oral and intravenous material to label bowel and intra-abdominal organs as well as vascular structures and thus permits a versatility largely unshared by alternative techniques, (4) Multiplanar reconstruction of stacked axial images using the computer memory is possible and offers the advantages of the sagittal and coronal views when desired or useful, (5) Images may be created in prone, supine or decubitus positions while still imaging the complete axial plane, (6) The image plane penetrates all structures and is unaffected by gas and bone, thus creating a readily understandable image which bears substantial correlation with similar gross anatomic planes.

Computed tomography has already established an important diagnostic niche in the localization of occult infection. It plays an important part in the imaging repertoire and can provide either primary or supplemental information of importance to alternative imaging techniques in the appropriate clinical setting. Further machine improvements will be aimed at reducing total examination-time and, with the greater availability of this technique, will undoubtedly play an increasing and more common role in this diagnostic process than it has occupied to date. However, it should be generally recognized that the use of computed tomography in this disease entity requires experience, the latest equipment and meticulous technique, and that these issues are important in judging the reasons for the current and evolving specific successes or failures of this imaging modality.

## REFERENCES

1. Wolverson MK, Jagannadharao B, Sundaram M, Joyce PF, Riaz MA, Shields JB: CT as a primary diagnostic method on evaluating intraabdominal abscess. AJR 133: 1089-1095, 1979
2. Quinn MJ, Sheedy PF, Stephens DH, Hattery RR: Computed tomography of the abdomen in patients with fever of unknown origin. Radiology 136: 407, 1980
3. Chiu LC, Shapiro RL, Yiu VS: Abdominal abscess. I. Computed tomographic appearance, differential diagnosis and pitfalls in diagnosis. (Abstract). Radiology 131: 566, 1979
4. Shapiro RL, Chiu LC, Yiu VS: Abdominal abscess. II. Diagnostic Efficacy of Computed Tomography and Comparison to Ultrasonography. (Abstract). Radiology 131: 567, 1979
5. Korobkin M, Callen PW, Filly RA, Hoffer PB, Shimshak RR, Kressel HY: Comparison of computed tomography, ultrasonography and gallium-67 scanning in the evaluation of suspected abdominal abscesses. Radiology 129:89-93, 1978
6. Callen P: Computed tomographic evaluation of abdominal and pelvic abscesses. Radiology 131: 171, 1979
7. Gerzof SG, Robbins AH, Birkett DH, Johnson WC, Pugatch RD, Vincent ME: Percutaneous catheter drainage of abdominal abscesses guided by ultrasound and computed tomography. AJR 133: 1-8, 1979
8. Haaga JR, Weinstein AJ: CT-guided percutaneous aspiration and drainage of abscesses. AJR 135: 1187-1194, 1980

---

## Triple Rx Better Than Single for Rectal Cancer

Combining surgery, radiation, and drug therapies in rectal cancer patients has lowered the recurrence rate from 50 to 21%, according to a 5-year cooperative study funded by the National Cancer Institute (NCI). After a 2-2½-year follow-up in 200 patients, the recurrence rate was 52% in patients treated by surgery alone, 39% in patients who received chemotherapy alone, and 32% in those given radiation alone. A 21% recurrence rate was found in patients who received the combined therapy consisting of surgery, followed by 4 to 6 weeks of radiation, and then 1½ years of chemotherapy. Dr. Vincent DeVita, head of NCI, said that this new triple treatment "opens new vistas," and may someday help patients avoid colostomy.

—Modern Medicine, March 30-April 15, 1981

# Angiography in Fever of Unknown Origin

## MORTON G. GLICKMAN, M.D.

ABSTRACT—Although angiography is seldom required anymore as a primary exploratory procedure in seeking the source of persistent fever, it frequently finds application in verifying diagnoses that are suspected but not conclusively established by less invasive diagnostic studies. Angiography is particularly useful and accurate in demonstrating mycotic aneurysms. Even if this diagnosis can be made by other means, the size and precise location must be demonstrated preoperatively. Angiography is also useful preoperatively in outlining vascular anatomy in sites where critical vessels may be displaced by a mass or obscured by surrounding inflammation or tumor.

Because of high resolution of small vessels and small parenchymal masses, magnification angiography may provide diagnostic information not available by other modes of examination. Angiography identifies masses and parenchymal abnormalities. Once they are identified, angiography can distinguish inflammatory lesions from tumors, both of which can cause fever but which require different forms of therapy, and from normal anatomic variants and uninfected cysts, which are not causes of fever but which may cause diagnostic confusion.

The term "fever of unknown origin" is usually reserved for febrile diseases which have been manifest for at least three weeks without diagnosis.[1] A variety of diseases, including various neoplasms, connective tissue disorders, and occult infections, may cause fevers of unknown origin. The frequency with which fever of unknown origin occurs has diminished in recent years as our ability to visualize anatomic abnormalities of internal organs by simple means has advanced.

In the early 1960's image intensified fluoroscopy, a major technologic breakthrough, became widely available and made selective angiography become technically feasible. Angiography provided accurate diagnosis of blood vessel abnormalities and, by visualizing parenchymal blood vessels of internal organs, permitted diagnosis of otherwise occult infections and tumors of these organs. Until ultrasound, computerized tomography, and the newer radiopharmaceuticals were developed, angiography was required relatively frequently to track down the source of fevers of unknown origin. In those days, however, the angiographic procedure, while often necessary, was far from a satisfactory means of solving this problem. Since no clinical, laboratory, or radiographic clue was available in most cases, a long, arduous procedure that has aptly been called exploratory angiography was required. Exploratory angiography consists of catheterizing and injecting all of the major arteries in the thorax and abdomen and any of the thoracic and abdominal veins that are not well enough opacified in the venous phase of the arterial injection until an abnormality is identified.[2]

Today ultrasound, computerized tomography, and nuclear medicine provide detailed images of the parenchyma of the thoracic and abdominal organs, visualize many of the major arteries and veins, distinguish fat and fluid from solid tissue, and localize foci of inflammation. These modes of examination carry little or no risk to the patient, whereas angiography has a small, but finite risk. None of these modes causes significant discomfort to the patient, whereas angiography causes pain and physical stress. The cost of examining multiple organs by these modes is less than the cost of angiography, and the amount of radiation exposure is less with all these modes than with angiography.

Although the information available from ultrasound, computerized tomography, and nuclear medicine studies has largely obviated the need for exploratory, nondirected angiography, more limited angiographic pro-

---

MORTON G. GLICKMAN, M.D., Professor of Diagnostic Radiology, Yale University School of Medicine, Department of Diagnostic Radiology.

Figure 1
Mycotic aneurysm in the superior mesenteric artery.

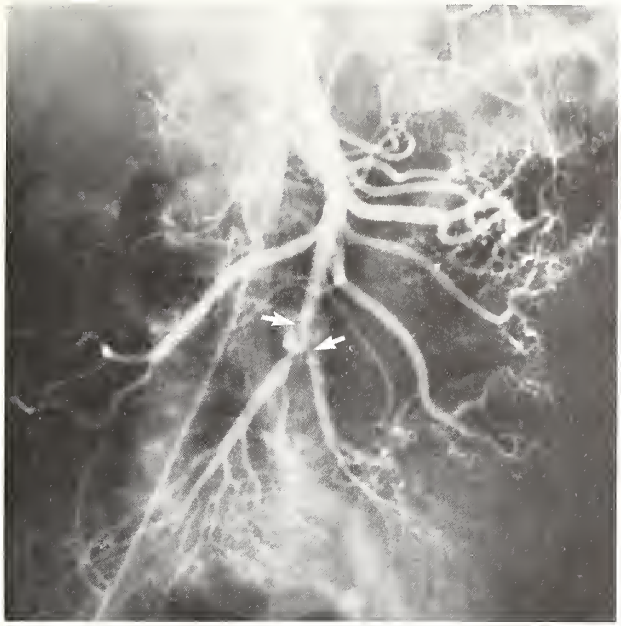


Figure 1a
Selective superior mesenteric arteriogram. A collection of contrast medium wider than the natural lumen of the artery is present at a bifurcation in the distal portion of the vessel. The lumen of the artery is narrowed just proximal and just distal to the aneurysm (arrows), a finding that suggests infection.

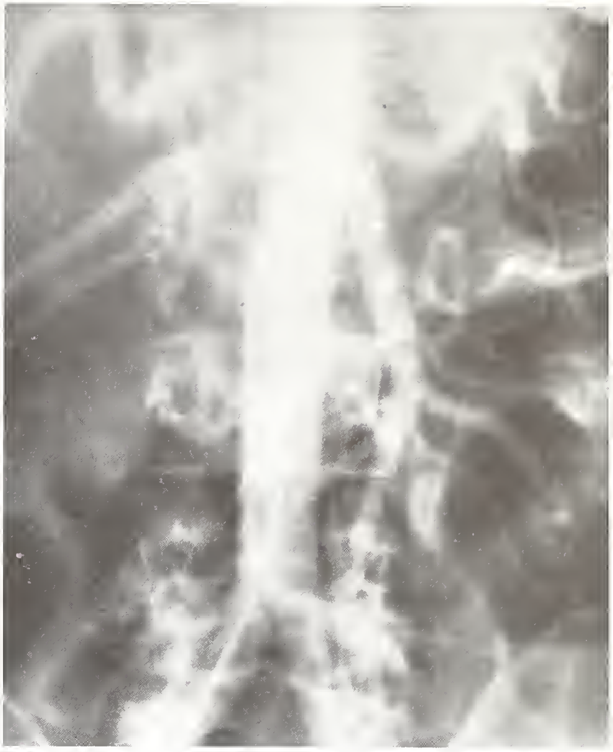


Figure 1b
Aortogram in the same patient fails to show the mycotic aneurysm even though the superior mesenteric artery is opacified, because of superimposition of the vertebrae and diminished density of the contrast medium due to dilution.

Reprinted with permission from Wyler DJ, Glickman MG and Brewin A: Persistent Serratia Bacteremia Associated with Drug Abuse. Western J Med, 122:70-73, 1975.

cedures remain a useful part of the diagnostic regimen in selected patients with fevers of unknown origin. In most cases in which angiography is used the suspected abnormality is a mycotic aneurysm, an abscess, or a tumor. By virtue of its ability to demonstrate clearly the contours of the lumina of large and small arteries and veins, angiography is the most sensitive and specific means of establishing the diagnosis of mycotic aneurysm and of localizing precisely the artery and the location along the course of that artery from which a mycotic aneurysm arises. Even if a mycotic aneurysm is suspected on the basis of less invasive studies, preoperative localization and demonstration of its size and extent are essential in planning surgical removal of the aneurysm and maintenance of adequate blood flow in the distribution of the affected artery. Magnification angiography produces an image two to three times larger than life-size without significant loss of resolution, thereby providing much greater sensitivity in evaluating small vessels and small masses than is available by any imaging procedure other than perhaps direct vision. This sensitivity is often helpful in evaluating parenchymal lesion-like inflammation or tumor if the diagnosis is not established with certainty by other modes.

The angiographic diagnosis of mycotic aneurysm requires demonstration of contrast medium outside the natural lumen of an artery or a vein. Mycotic aneurysms are usually sacular, and most commonly occur at bifurcations or at points, such as the aortic arch just distal to the left subclavian artery, where the vessel abruptly turns or narrows. In contractile, muscular arteries, a mycotic aneurysm can usually be distinguished from an uninfected false aneurysm by characteristic narrowing of the artery proximal and distal to the aneurysm. The narrowing probably results from edema of the wall of the vessel and may be a specific sign of active inflammation (Figure 1). These signs are readily demonstrated and easily interpreted, provided only that the appropriate artery is selectively catheterized. Aortography without selective catheterization may not be sufficient to demonstrate mycotic aneurysms, even those that arise from primary aortic branches, because of excessive dilution of contrast medium and superimposition of other arteries or of the spine (Figure 1b). False positive and false negative arteriograms in the diagnosis of nycotic aneurysm are unusual.

The arteriographic signs of parenchymal inflammation may be more difficult to interpret. Inflammation and infection are characterized by hyperemia, which in most cases can be demonstrated angiographically as vasodilation. Although vasodilation may be minimal and difficult to recognize by angiography in early stages of infection, disease that has been present long enough to qualify as fever of unknown origin is usually clearly manifest.[3] Vasodilation of intraparenchymal arteries can be recognized even when only a segment of an organ is involved, since the dilated arteries can be visualized farther distally in the affected segment than in normal segments (Figure 2). Hyperemia may also be manifest by the presence of collateral circulation from the capsule of the organ, from the hilum of the organ, or from adjacent organs (Figure 2).

In addition to vasodilation, other characteristics of abnormal arteries should be considered in order to distinguish an inflammatory process from a neoplasm. The arteries that supply inflamed or infected tissue are intrinsically normal arteries. They have normal course and branching pattern and a gradually tapered lumen. Although they are dilated by inflammation and occasionally arterial segments may be narrowed by spasm or encasement, the normal organization and distribution remain unaffected. The vessels within a malignant tumor, on the other hand, are not morphologically normal. These are not arteries and veins that developed as the organ developed, but are new vessels that were not present prior to the development of the neoplasm, hence the term tumor neovascularity. Tumor vessels are irregular in caliber and haphazard in distribution. Figure 3 illustrates an example of an infiltrative renal tumor with many of the same gross characteristics as the infiltrative renal infection in Figure 2. No discrete mass is present. The lesion is hyperemic, and the overall outlines of the kidney remain relatively unaffected. However, the infiltrative tumor is different from the infiltrative infection in that the arteries that supply the tumor are morphologically abnormal.

Abscesses can be distinguished from necrotic hypervascular tumors using similar criteria.[4] Although both are well-defined masses with thick walls and necrotic centers, and although in both the arteries are dilated and the walls are hyperemic, the vessels about the

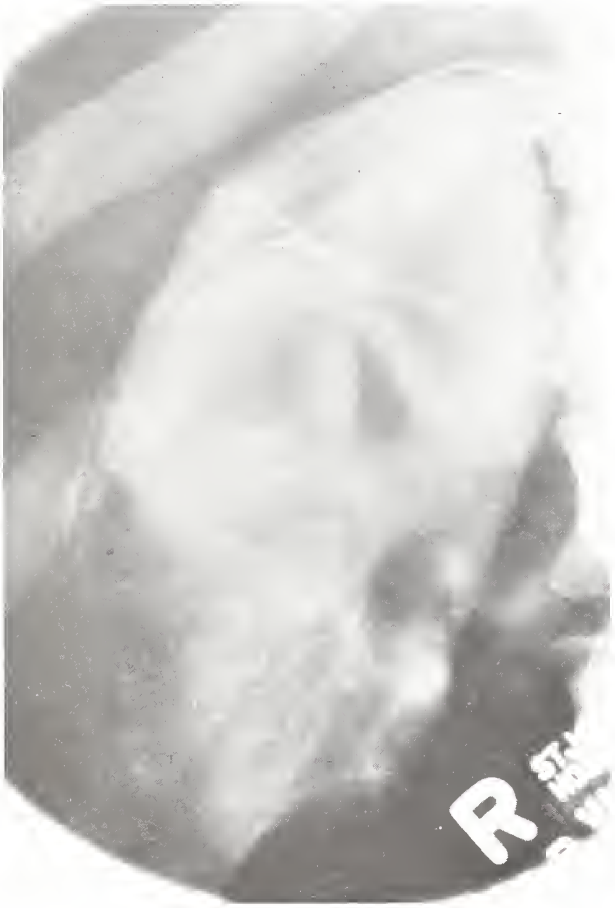


Figure 2
Infiltrative renal infection, lower pole of the kidney. Late arterial phase. A dilated renal capsular artery from the upper pole extends all the way to the lower pole where it ramifies, contributing collateral circulation to the infected parenchyma. Parenchymal arteries in the lower pole appear closer together than normal, a manifestation of dilation. However, they are all approximately the same size and they course parallel to one another.

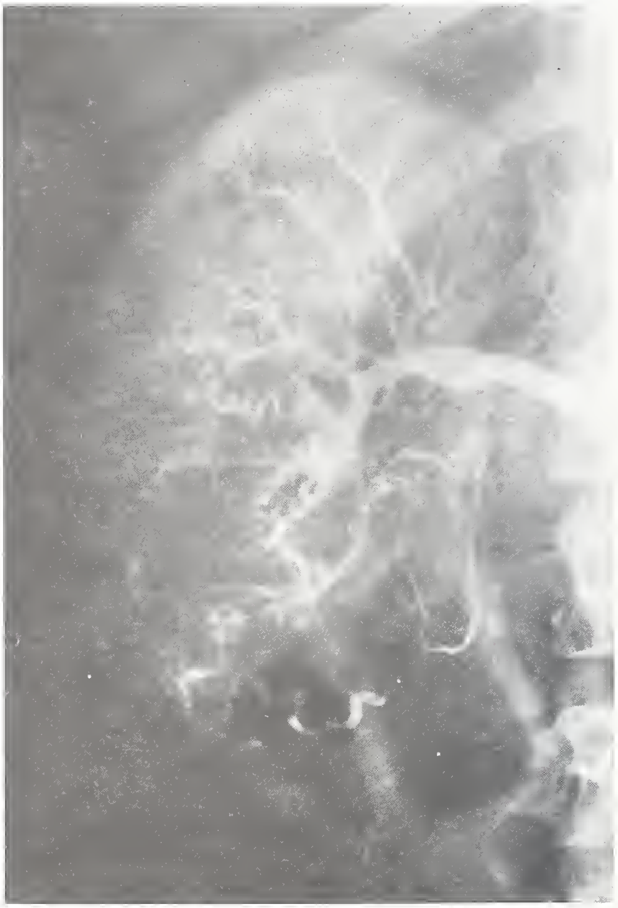


Figure 3
Infiltrative renal tumor. The tumor has replaced normal tissue and the outline of the kidney remains relatively normal. However, a diagnosis of neoplasm can be made because of the disorganized, intrinsically abnormal tumor neovascularity in the lower pole.

circumference of an abscess are intrinsically normal, smooth, tapering, appropriately branching vessels, while those at the periphery of necrotic tumors are intrinsically abnormal arteries (Figure 4). A recent report of successful therapy of renal carbuncle with antibiotics rather than surgery in a series of seven patients emphasizes the importance of distinguishing inflammatory lesions from tumors non-operatively.[4]

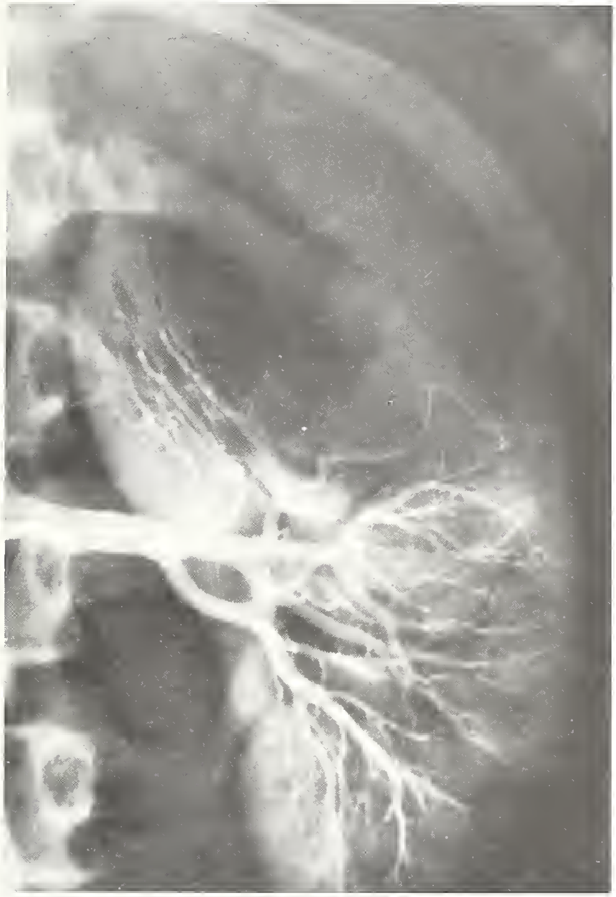


Figure 4a
Renal abscess. Stretched and arced arteries surround a mass which is avascular in the center. A diagnosis of abscess can be established because the arteries in the wall remain organized and retain normal branching patterns.

Many tumors are less vascular than the organ from which they arise, and the arteries within the mass may not be visualized. These hypovascular tumors must be evaluated by different criteria. By angiography a hypovascular tumor displaces normal arteries near the mass and distorts the contour of the organ. To determine whether a hypovascular mass is a benign, uninfected cyst or a tumor, the interface between the mass and the normal parenchyma should be carefully evaluated.[3] A cyst displaces parenchyma, but does not infiltrate the parenchyma. A sharp interface should be visible by angiography at all points where the circumference of the mass abuts against a vascular portion of the parenchyma of the organ (Figure 5). The absence of a sharp interface indicates infiltration or edema and suggests malignancy. Oblique projections, injections following infusion of epinephrine, and venography may add information to further increase the accuracy of diagnosis in these cases. This type of analysis is particularly important in distinguishing a necrotic hypovascular tumor from a cyst since they may be difficult to distinguish by ultrasound or computerized tomography. In a febrile patient, diagnosis of an uninfected cyst does not resolve the source of the fever, while diagnosis of a necrotic tumor establishes a likely cause of fever. An infected cyst by angiography has the features of an abscess, and seldom presents diagnostic difficulty.

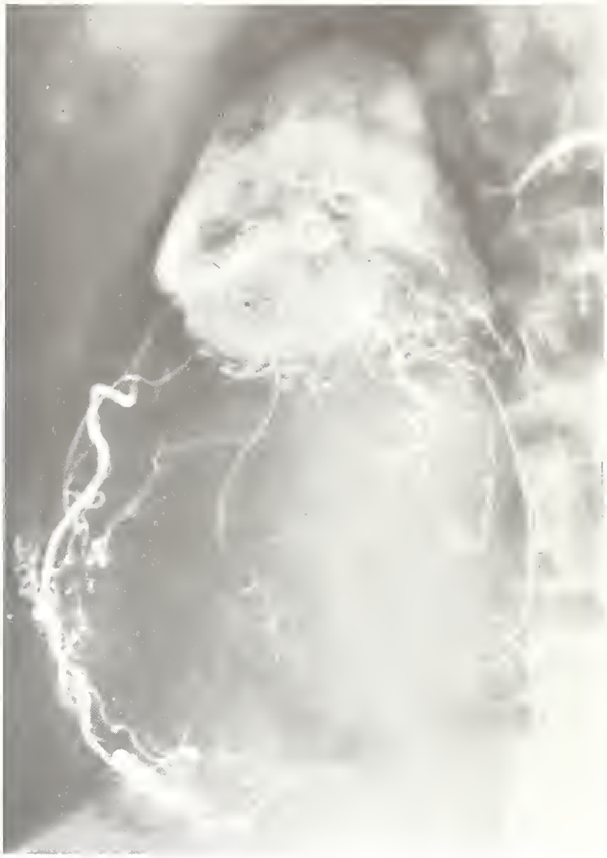


Figure 4b
Necrotic renal carcinoma. Tumor neovascularity in the wall of the mass establishes a diagnosis of neoplasm.

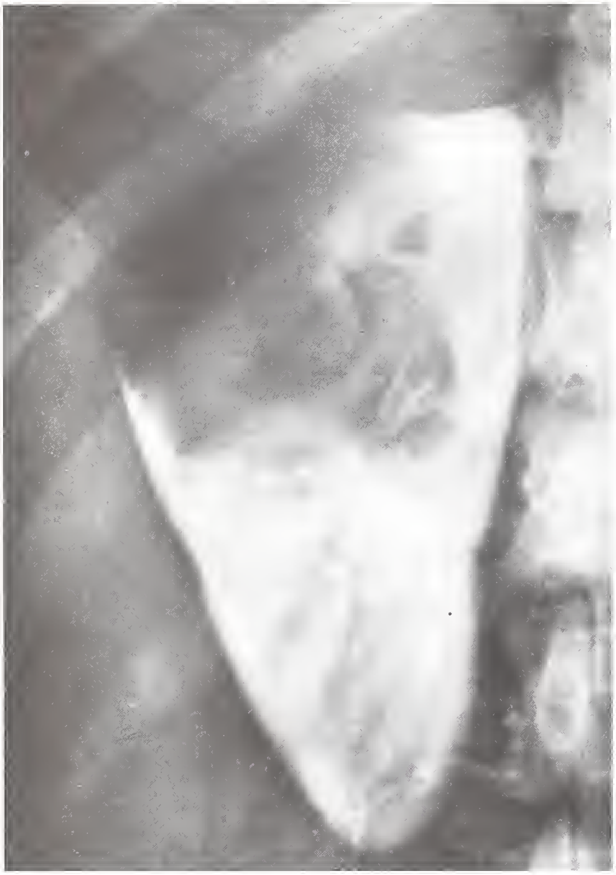


Figure 5a
Benign renal cyst. In the parenchymal phase of the arteriogram a sharp interface is present where the mass abuts against and distorts the highly vascular renal cortex.

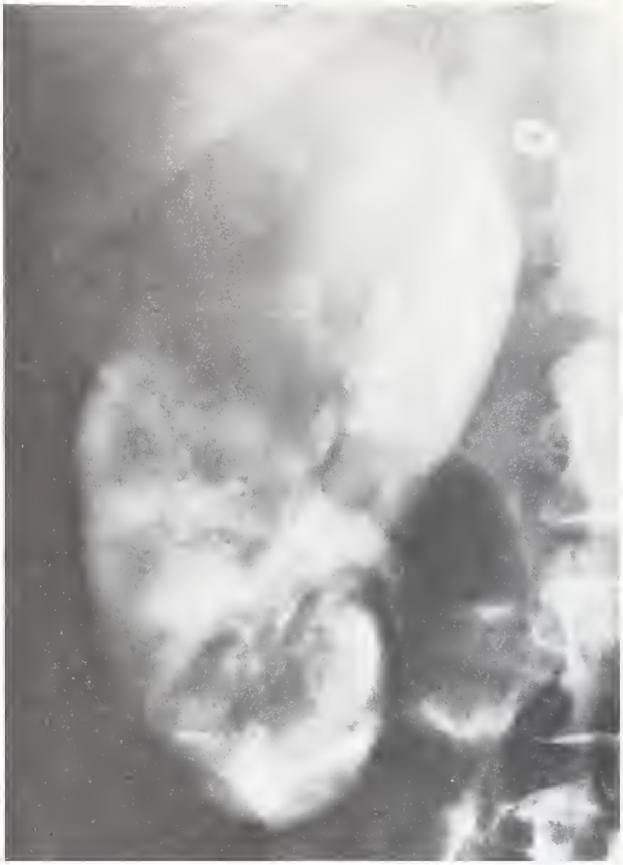


Figure 5b
Hypovascular renal carcinoma. The interface between the mass and the renal cortex is indistinct, indicating infiltration of adjacent cortex by the tumor.

After the diagnosis of an inflammatory process or a tumor is established, angiography may be helpful or necessary to aid in planning a surgical approach or in deciding whether surgery or medical therapy is more appropriate. Large masses may so distort adjacent organs that the organ of origin of the mass may not be clearly shown by ultrasound, computerized tomography, or nuclear medicine studies. Angiographic demonstration of the source of the arterial supply to the mass documents the origin of the mass and demonstrates the location of tissue planes (Figure 6).[5] Preoperative demonstration of the location and number of accessory arteries and demonstration of normal arteries displaced by a mass may prevent surgical complications.

Renal and occasionally hepatic malignancies tend to invade the lumina of veins and may grow as tumor thrombi for varying distances through the venous system. Curative resection requires that tumor thrombi be removed along with the rest of the tumor. Unless ultrasound or computerized tomography have unequivocally shown that the veins that drain the organ involved by such a neoplasm are open and free of tumor, preoperative venography should be performed.

Figure 6
Large necrotic right renal carcinoma. Physical examination, radioisotope liver-spleen scan, and ultrasonography suggested that a large mass was present in the right lobe of the liver.

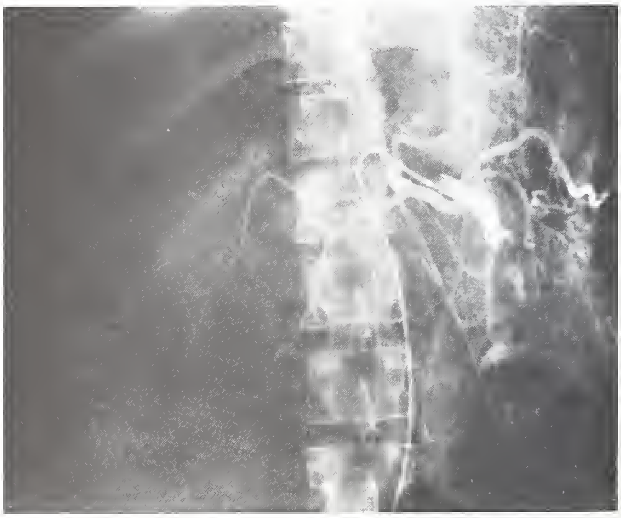


Figure 6a
Hepatic arteriogram shows displacement of the celiac axis and of the arteries supplying both the left and right lobes of the liver to the left. No liver vessels extend to the location of the mass.

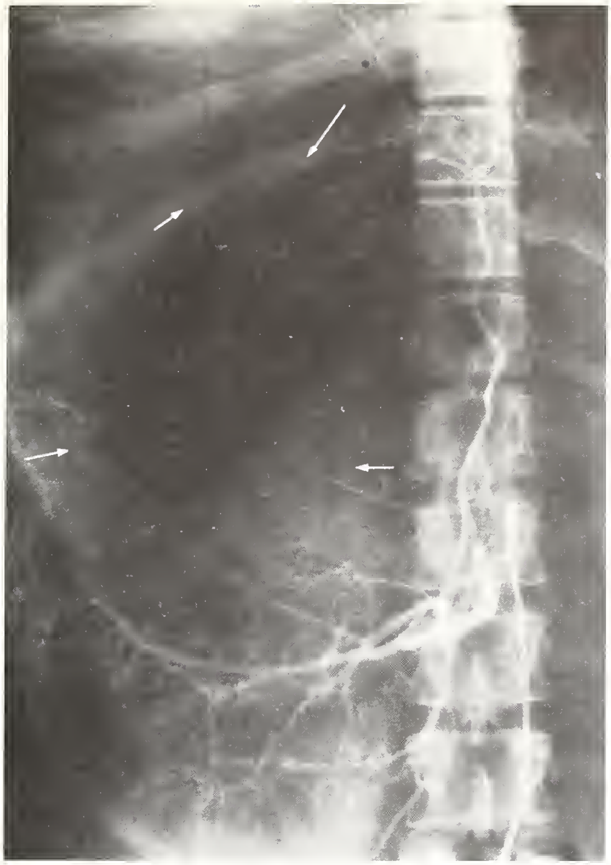


Figure 6b
Renal arteriogram shows a large mass in the upper pole of the kidney extending up to the diaphragm and displacing the lower pole of the kidney almost into the pelvis. Most of the volume of the mass is necrotic but tumor neovascularity (arrows) near the margins of the mass establishes the diagnosis.

## REFERENCES

1. Molavi A, and Weinstein L: Presistent Perplexing Pyrexia: Some Comments on Etiology and Diagnosis. Medical Clinics of North America, 54:379-396, 1970.
2. Wyler DJ, Glickman MG and Brewin A: Persistent Serratia Bacteremia Associated with Drug Abuse. Western J Med, 122:70-73, 1975
3. Green B: Renal Masses, in Diagnostic Imaging in Renal Disease, Rosenfield AT, Glickman MG, Hodson J, editors, New York, Appleton-Century Crofts, 1979
4. Schiff M Jr, Glickman M, Weiss RM, Ahern MJ, Touloukian RJ, Lytton B and Andriole VT: Antibiotic Treatment of Renal Carbuncle. Annals of Internal Medicine, 87:305-308, 1977
5. Shanser JD, Glickman MG and Palubinskas AJ: Pitfalls in the Arteriographic Differentiation of Intrahepatic and Extrahepatic Masses. Am. J. Roentgenology, Rad. Therapy and Nuclear Med., 121:420-429, 1974

## Coronary Deaths During Exercise Occur in Those Already Impaired

The tales of middle-aged men who died during strenuous exercise are frequent enough to offer many individuals an excuse for avoiding exercise altogether.

But those men who die on the tennis court or the jogging track almost invariably are individuals who already had serious heart disease, says a report in the October 17 Journal of the American Medical Association.

The Institute for Aerobics Research, an exercise center in Dallas, Texas, kept records for more than five years on almost 3 thousand adults in an effort to determine whether exercise causes heart attacks.

There were only two heart attacks during exercise and no deaths during the study, reports Larry W. Gibbons, M.D. Both men survived and were again exercising regularly.

"It appears that middle-aged men who die suddenly or have cardiac events in association with exercise usually are individuals with severe coronary disease," Dr. Gibbons says.

The Dallas physician cites other studies which found that of 63 cases of sudden death associated with physicial exercise, no instance was found in which death could be regarded as due to the effects of extreme exertion on a previously healthy heart.

It is the combination of exercise and disease together that carries the major risk. Exercise places an additional' stress on an already susceptible heart.

The conclusion is that there is a small, but not negligible, acute risk of heart attack for adults participating in vigorous exercise. But factors such as heart disease, competition, regularity of exercise, and smoking may modify the risk.

—New York State Journal of Medicine, February 1981

# New Radionuclides in the Diagnosis of Obscure Infections

## MATHEW L. THAKUR, PH.D.

The diagnosis of obscure infection is a challenging problem. Since Bell et al[1] and Lavender et al[2] reported the accumulation of the tumor-seeking $^{67}$Ga-citrate in non-neoplastic inflammatory lesions, the use of this agent for the diagnosis of obscure abscesses has grown exponentially. Over the past decade, however, the continued evaluation of clinical results has produced the consensus that $^{67}$Ga-citrate has many limitations, primarily arising from nonspecificity caused by its accumulation in many normal tissues as well as in neoplastic lesions. Furthermore, the use of $^{67}$Ga-citrate for imaging other infective processes, such as the valvular involvement by endocarditis, has been only moderately successful.[3] Consequently, there remains a compelling need for a better agent for the diagnosis of obscure infections.

The pathophysiological response associated with infections such as abscesses generates a focal accumulation of polymorphonuclear leukocytes into the lesions. Similarly, the vegetative lesions of infective endocarditis predominantly amass platelets over the growing cluster of bacteria.[4] The involvement of cellular blood elements in such infective processes strongly suggest the use of blood cells as specific agents for the noninvasive diagnosis and location of obscure lesions.

Since 1968, many attempts have been made to use leukocytes labeled with gamma-emitting radionuclides for the localization of abscesses by imaging.[5-8] In 1976, we evaluated several radioactive agents for labeling phagocytic leukocytes.[9-10] Among them, $^{111}$In chelated with 8-hydroxyquinoline (oxine) appeared promising. Subsequently this agent demonstrated the ability to label platelets as well as lymphocytes and red cells efficiently.[11, 12] In-vitro studies have indicated that the radioactive agent passively diffuses through cell membrane, $^{111}$In binds to cytoplasmic components, and a major proportion of oxine elutes from cells.[13, 14] When $10^8$ neutrophils, $10^{10}$ platelets or $10^8$ lymphocytes are labeled with 0.5 mCi $^{111}$In containing up to 50 $\mu$g oxine and 50 $\mu$g ethanol (used as a solvent to dissolve the complex), no alteration of the cell function occurs.[15-17] The radionuclide $^{111}$In emits two gamma rays (173 keV 84% and 247 keV 94%), highly suitable for external detection, and has a half-life (67 hrs.) long enough for imaging the in-vivo cell distribution for 4-5 days post-administration. Initial studies with experimental abscesses and vascular thrombi demonstrated that the lesions could be scintigraphically detected using $^{111}$In labeled autologous leukocytes and platelets, respectively. Confirmation of the scintigraphic detection was obtained measuring the radioactivity in excised tissues, which revealed that the lesion-to-tissue radioactivity ratios were very high.[11, 18, 19]

Following the impetus generated by these results, we performed a few initial clinical studies to detect obscure abscesses using $^{111}$In labeled autologous leukocytes. Lesions were detected accurately.[20, 21] Since then, at least three studies with a large number of patients have been reported.[22-24] Indium-111 labeled leukocyte scintigraphy has been particularly valuable in detecting abdominal and pelvic abscess with greater than 95% specificity and sensitivity. The negligible nonspecific uptake of the agent by the normal bowel, and the eight-hour half-life of leukocytes in circulation provide accurate visualization of abdominal lesions when imaged at 4-24 hours post-injection. The technique eliminates the undesirable bowel cleansing procedure and imaging at 48-72 hours post-injection, frequently required when $^{67}$Ga-citrate is employed. Furthermore, $^{111}$In-labeled leukocytes are taken up by

---

MATHEW L. THAKUR, Ph.D., Associate Professor of Diagnostic Radiology, Yale University School of Medicine, Department of Diagnostic Radiology.

neither neoplastic lesions[23] nor by uninfected wounds while healing, and thereby provide the specificity so highly desired.

Figure 1 is an example of a 50-year-old man who had undergone abdominal surgery a week before he was given approximately 500$\mu$Ci $^{111}$In-labeled autologous leukocytes. An anterior abdominal gamma camera image, obtained 18 hours post-injection, shows an intense focal uptake of the radioactivity below the lower quadrant of the liver. The radioactivity accumulation in a small infected portion of the incision is also seen. Since leukocytes are not taken up by neoplastic lesions, $^{111}$In leukocyte scintigraphy used in conjunction with ultrasound and computerized tomography may play an important role in differentiating tumors and abscesses. Leukocyte scintigraphy however is less accurate in the evaluation of suspected bone and joint infection[22, 23] for reasons not clearly understood at the time of this writing.

We studied the feasibility of using $^{111}$In labeled platelets for the detection of experimental infective endocarditis in rabbits.[25] The aortic valve of the animals was abraded by catheters and bacteria were injected. Following the development of infective endocarditis (3-5 days later), $^{111}$In labeled platelets were administered intravenously to each animal and serial cardiac gamma camera images were obtained over three days. The delayed biological clearance of platelets accounted for blood pool images during the first 24 hours. By 48 to 72 hours, however, the blood pool had become faint and the valvular lesions were clearly delineated due to the intense focal uptake of the radioactivity. Findings were confirmed, after sacrificing the animals, by the pathological examination of the lesions and by the determination of associated radioactivity.

Following this, we have begun initial trials in patients with suspected infective endocarditis.[26] In one of the patients, there was a marked multifocal uptake in the region of prosthetic conduit, which was confirmed at surgery to have multiple bacterial vegetation. The remainder of the six patients with clinically or echocardiographically documented infective endocarditis had negative images during various phases of the disease. Many factors may account for these results.

Platelets are very sensitive to many parameters, such as temperature, the medium in which they are suspended, the pH, and the centrifugal force applied for their isolation from whole blood. A slight variation in any of these factors may alter platelet response. The antibiotic treatment these patients receive may reduce the degree of platelet deposition on the lesion, thereby minimizing the possibility of detecting a lesion, above the radioactive cardiac blood pool. It is also possible that these lesions are too small to be resolved by gamma camera imaging. These variables, individually or in combination, may interfere with the sensitivity of the agent. However, further experience and surgical and histological examinations of lesions may provide a better understanding of the problems.

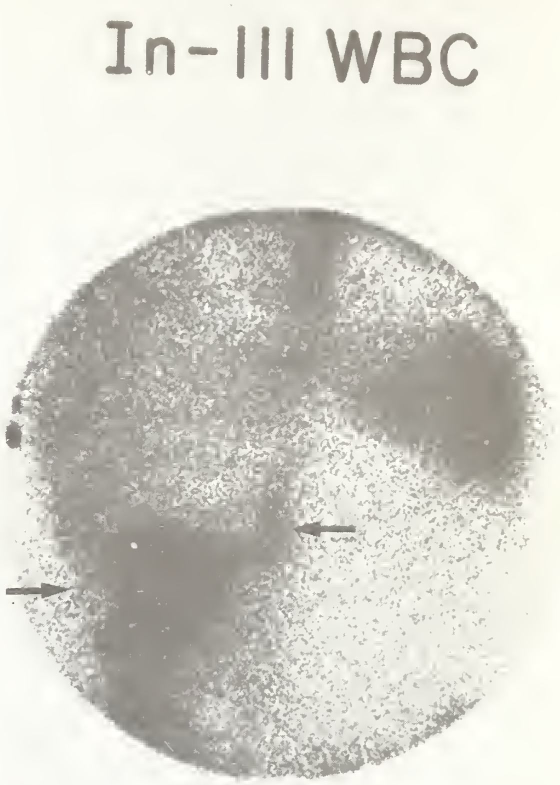


Figure 1
Anterior abdominal gamma camera image of a patient who had received approximately 500 µCi $^{111}$In labeled antologous leukocytes, 18 hrs. previously. The radioactivity at the right and the upper left of the image represents the normal spleen and the liver respectively. The intense accommodation of radioactivity below the liver (arrow), clearly delineates the location of infection. The small infected portions of the surgical incision (arrow) is also visualized. (In collaboration with Drs. R. Neumann and P. Hoffer.)

Despite numerous applications and many successful studies using $^{111}$In labeled cellular blood elements, further limitations of the technique have become apparent.[27] Indium-111 oxine labels all types of cells indiscriminantly. Specific cell-type must therefore be separated from whole blood to achieve maximum incorporation of radioactivity. To achieve the cell separation as efficiently as desired better methods are required.

The stability constants of $^{111}$In-oxine are lower than those of $^{111}$In-transferrin. Efficient incorporation of $^{111}$In requires plasma free medium; plasma is the most desirable. Indium-111 labeled cells are believed to induce higher radiation dose to the spleen than the dose induced by $^{67}$Ga. We have been evaluating the use of other radionuclides as traces for blood cells. In preliminary investigations ruthenium-97 (t 1/2 -2.88

days, 215 keV 91%) when chelated to oxine did not bind to transferrin and allowed cell-labeling in plasma. The estimated tissue radiation dose delivered by $^{97}$Ru is approximately 50% of that delivered by $^{111}$In.[28] These strongly attribute that $^{97}$Ru-oxine is worthy of further investigations and may play a major role in improving cell labeling technique. The shorter lived radionuclides of Indium have also been considered. These include cyclotron-produced, $^{109}$In (t 1/2 4.2 hrs. $\gamma$ - 203 keV 91%), and generator-produced $^{115m}$In (t 1/2, 4.5 hrs., $\gamma$ - 355 keV 50%, parent $^{115}$Cd - t 1/2, 43 d).[29, 30] These radionuclides are particularly suitable for the localization of abscesses since such lesions can be detected 4-24 hours after the administration of labeled leukocytes.

This work is supported by the DOE Contract EY-76-S-02-4078.

## REFERENCES

1. Bell EG, O'Mara RE and Henry CA et al: J Nucl Med 12:338, 1971
2. Lavender JP, Lowe J and Barker JR: Br J Radiol 44:361-366, 1971
3. Wiseman L, Rouleau J, Rigo P, et al: Radiology 120:135-138, 1976
4. Angrist A and Oka M: JAMA 183:249, 1963
5. Windelman I, Collisca CJ and Sandler S: Am J Roentgenol 103:881-885, 1968
6. Deysine M, Robinson RG, Wilder JR: Surg Gynecol Obstet 131:216-220, 1970
7. Anderson BA, English D, Asklin HE: Arch Intern Med. 135:1067-1071, 1975
8. Burleson RL, Holman BR, Tow DE: Surg. Gynecol. Obstet. 191:379-382, 1975
9. McAfee JG, Thakur ML: J Nucl Med 17:480-487, 1976
10. McAfee JG, Thakur ML: J Nucl Med 17:488-492, 1976
11. Thakur ML, Welch MJ, Joist JH et al: Thrombosis Research, 9:345-357, 1976
12. Rannie GH, Thakur ML, Ford WL: Clin Expt Immunol 29:509-516, 1977
13. Thakur ML, Segal WA, Louis L, et al: J Nucl Med 18:1022-1026, 1977
14. Mathias CJ, Welch MJ: J Nucl Med 20:659, 1979 (abstract)
15. Zakhireh B, Thakur ML, Melech HL et al: J Nucl Med 20:741-747, 1979
16. Thakur ML, Walsh LJ, Melech HL et al: J Nucl Med. In press
17. Chisholm PM, Peters AM: In, Indium-111 labeled neutrophils, platelets and lymphocytes, Ed. Thakur ML and Gottschalk A, Trivirum Pub. Co., New York. In press
18. Thakur ML, Coleman RE, Mayhall CG: Radiology 119:731-732, 1976
19. Thakur ML, Coleman RE, Welch MJ: J Lab Clin Med 89:217-228, 1977
20. Segal AW, Thakur ML, Arnot RN et al: Lancet 13:1056-1058, 1976
21. Thakur ML, Lavender JP, Arnot RN et al: J Nucl Med 18:1014-1021, 1977
22. Coleman RE, Welch DM, Baker WJ et al: In, Indium-111 labeled leukocytes, platelets, and lymphocytes. Ed. Thakur ML and Gottschalk A, Trivirum Pub. Co., New York. In press
23. Goodwin DA, Doherty PW, McDougall IR: In, Indium-111 labeled leukocytes, platelets and lymphocytes, Ed. Thakur, ML and Gottschalk A, Trivirum Pub. Co., New York. In press
24. Forstrom LA, Weiblen BJ, Gomez L et al: In, Indium-111 labeled leukocytes, platelets, and lymphocytes. Ed. Thakur ML and Gottschalk A, Trivirum Pub. Co., New York. In press
25. Riba AL, Thakur ML, Gottschalk A et al: Circulation 59:336-343, 1979
26. Riba AL, Thakur ML, Berger HJ et al: Unpublished data
27. In-111 labeled neutrophils, platelets and lymphocytes. Proceeding of the State of the Art Symposium, Ed. Thakur ML and Gottschalk A, Trivirum Publication, New York. In press
28. Zoghbi SS, Thakur ML, Gottschalk A et al: J. of Labelled Compounds and Radiopharm. (Abstract) In press
29. Lambrecht RM and Thakur ML: In preparation
30. Ehrhart GJ, Volkert W, and Goeckeler WF: J. of Labelled Compounds and Radiopharm. (Abstract) In press

# Hospital of St. Raphael
# vs.
# Commission on Hospitals and Health Care

## DECISION OF THE CONNECTICUT SUPREME COURT
November 11, 1980

### Memorandum of Decision

Appeal from a decision of the defendant commission denying a request for approval of the plaintiff's proposal to purchase and operate a computerized axial tomography scanner, brought to the Superior Court in the judicial district of New Haven and tried to the court, *Falsey, J.;* judgment sustaining the appeal, from which the defendant, on the granting of certification, appealed to this court. *Error; judgment directed.*

**Parskey, J.:** This appeal concerns a request by the Hospital of St. Raphael, a general teaching hospital located in New Haven, to purchase a computerized tomographic total body scanner. Because the scanner's cost exceeded $100,000, approval of this request by the commission on hospitals and health care (commission) was required by General Statutes § 19-73m. The commission denied the request, citing both a present excess capacity for computerizd tomographic (CT) scanning in the region and the duplication of services which would ensue if the proposed project were approved. . . . The hospital appealed[1] this decision to the Superior Court, which reversed, holding that the commission's decision was clearly erroneous in view of the reliable, probative and substantial evidence on the whole record . . . because no workable CT scanner owned by an institution under the commission's control was available for use by the New Haven community. We granted the commission's petition for certification and we reverse.

A CT scanner is a diagnostic device which combines x-ray equipment with a computer and a television monitor to produce images of cross sections of the human body. In documenting its need for the scanner, the hospital contended before the commission that approximately 2000 patients per year potentially could benefit from receiving a CT scan at St. Raphael's. Other evidence, however, indicated that fewer than 100 patients were actually transferred to another facility to receive scans. Thirty-five patients could not be moved due to acute head trauma. The balance of the hospital's projected yearly use of the scanner was to be the result of scans performed on patients with intracranial lesions, lymphoma, jaundice and abdominal masses and CT scans performed as an alternative in some cases in which isotopic brain scans are currently performed.

In addition to this evidence of need, the commission also heard evidence of the present scanning capacity provided by CT scanners in other facilities in the New Haven area. Yale-New Haven Hospital presently has two CT scanners. One is not functional except for occasional emergency use, although Yale-New Haven is planning to submit a proposal to update this scanner. The other scanner is not owned by Yale-New Haven, but is presently on loan from the manufacturer primarily for research purposes. Because this scanner is the only one at Yale-New Haven Hospital in good working condition, it is presently being used clinically. A third CT scanner in the region is operated by a private group of radiological physicians, Temple Radiology Group. This scanner is currently operating at approximately one-third of its capacity. It could be used for over 2000 additional scans per year, although its maximum

---

[1] We reject the commission's contention that the hospital was not aggrieved by the commission's decision; see General Statutes § 19-73p; and that, as a result, the trial court did not have jurisdiction over the case. The court found that funds had been earmarked for the purchase of a scanner. It further found that funds had already been expended and space set aside by St. Raphael's to accommodate the scanner. These subordinate facts amply support the court's conclusion that the hospital was aggrieved by the denial of its application.

---

EDITOR'S NOTE: Legal citations are deleted.

utilization is inhibited because not every health insurance carrier reimburses patients for scans performed at this facility. On the basis of this evidence concerning regional CT scanning capacity, the commission denied St. Raphael's request for the purchase of a CT scanner.

In reversing the commission's decision, the court below focused primarily on the fact that the use of the scanner operated by the private radiological group was outside the commission's jurisdiction. Because the commission could not regulate the extent of the availability of this scanner, the court disregarded it for purposes of ascertaining regional capacity. The court similarly disregarded both scanners at Yale-New Haven, one because it was not working and the other because Yale-New Haven did not own it. Concluding that no workable scanner was owned by an institution under the control of the commission, the court held that the commission's decision denying the St. Raphael request was clearly erroneous.

The commission is charged by law with the responsibility for approving capital expenditures of $100,000 or more by health care facilities or institutions. . . . Hospitals are specifically included within the meaning of health care facilities or institutions. General Statutes § 19-73b. In reviewing a request for such a capital expenditure, the commission is directed to "consider such request in relation to the community or regional need for such capital program, the possible effect on the operating costs of the health care facility or institution, the recommendations of the Health Systems Agency regarding such proposal, and such other relevant factors as the commission deems necessary." . . . In addition, the commission is directed to consider the effectiveness of the facility's delivery of health care services, the quality of available health care and the duplication of service by institutions and facilities in the area served. . . . In its consideration of the foregoing factors in this case the commission concluded that the region had excess capacity and the proposed services would duplicate services provided by the health care facilities which in the aggregate are operating at less than full capacity.

In reviewing the action of an administrative agency the trial court must accept the evidence presented to such agency uncoated by any judicial gloss. "Conclusions reached by an administrative body must be upheld by the court if they are supported by the evidence that was before the administrative body. . . . The credibility of witnesses and the determination of issues of fact are matters within the province of the administrative agency. . . . It is not the function of the court to retry the case. The question is not whether the trial court would have reached the same conclusion but whether the record before the commission supports the action taken. . . .

The trial court recognized that in reviewing the commission's action it was precluded from substituting its judgment for that of the commission as to the weight of the evidence on questions of fact. . . . Rather than challenge directly the commission's factual conclusion of excess regional scanning capacity, the trial court reevaluated the evidence on the basis of its interpretation of the pertinent statutes. Specifically, the trial court took the view that "duplication of service by institutions and facilities in the area served" . . . must be construed to mean duplication of services provided by facilities over which the commission had regulatory power to control access and availability. The court also held that any duplication which resulted from equipment not owned by such a facility could not be taken into account. . . .

In arriving at its conclusion of excess regional scanner capacity, the commission included the CT scanner used by Temple Radiology Group, an organization of private physicians, and the two scanners at Yale-New Haven Hospital. The court concluded that the Temple scanner could not be considered because the group was not subject to regulation by the commission and that the two scanners at Yale-New Haven could not be considered because one was not functional except on an emergency basis and the other was not owned by the hospital. The second Yale-New Haven scanner was on loan principally for research purposes, but was in fact being utilized for clinical purposes.

There is nothing in the statutory scheme which limits the commission to a consideration of only such units which are owned by regulated health care facilities. In arriving at its finding of regional need, the commission may consider all units available for medical use by the general public whether operated by regulated or by nonregulated health care facilities. If a unit is on loan for a limited purpose such as research but is in fact also used for clinical purposes, it is for the commission to weigh this factor in its deliberations and to determine to what extent, if any, it would discount the availability of such unit because of the purported limited nature of its use. The commission could hardly ignore the fact that the Temple scanner was operating at one-third capacity and that it was available for use by a substantial number of ambulatory patients of St. Raphael's.

We are not suggesting that, despite the availability of scanners at Temple and Yale-New Haven, the commission would not have been justified in approving the plaintiff's application. The record discloses several factors which could impede the use of the scanners at either place. The Temple scanner, for example, was available for limited use on an outpatient basis. It was not available during evenings, nights and weekends, and would not be available for seriously ill patients who could not be moved or for emergency cases. Moreover, Temple required a nurse to accompany every patient who was transported there for a scan. The use of the Yale-New Haven scanner presented the problem of delay, nine days for inpatients and about three weeks for outpatients. Delays in scans would increase the hospital stays for inpatients. Prompt diagnosis and appropriate therapy provide the greatest assurance of reduced morbidity and mortality for neurosurgical patients.

In balancing these factors against the potential duplication of services, the commission could well have concluded that the improvement in the quality of care at St. Raphael's resulting from the availability of its own scanner outweighed whatever savings might accrue from avoiding a duplication of services, especially in light of the negative factors involved in compelling patients at St. Raphael's to avail themselves of scanners at Temple and Yale-New Haven. But that conclusion was for the commission to reach. Its contrary conclusion is not subject to judicial reversal on the facts of this case.

The hospital contended before the trial court that the commission's denial of the scanner application resulted in St. Raphael's being denied the equal protection of the laws. . . . In renewing that argument on appeal, the hospital does not directly attack the pertinent statutes claiming that they are facially invalid. Instead, the hospital maintains that the statute has been unequally applied in the sense that the commission denied the application in the present case even though it had approved other scanner applications submitted by hospitals with qualifications and needs allegedly equal to or less than those of St. Raphael's. This argument misses the mark because no evidence of purposeful discrimination was ever presented in this case. . . . An equal protection claim based on unequal application of the law does not arise from conclusory allegations regarding past decisions, but rather must be established by competent evidence. The bare fact that certain scanner applications in the past were approved, while the present application was denied, does not approach the required evidentiary burden imposed on a party claiming discriminatory enforcement.

The final claim raised by the hospital before the lower court and presented to us as an alternative ground for upholding the result reached below concerns certain guidelines which the plaintiff maintains formed the basis of the commission's action in denying the application. It is clear that informal guidelines, promulgated outside the rulemaking framework of the Uniform Administrative Procedure Act . . . may not be applied as substantive rules. . . . It is equally clear, however, that the commission in the present case did not apply the informal guidelines as regulations in considering the plaintiff's application. The only guidelines that the plaintiff did not meet concerned the number of intracranial operations being performed. The guideline was set at fifty per year; thirty-five per year were performed at St. Raphael's. This shortfall, however, played no role in the commission's ultimate decision on the application. That decision was plainly grounded on regional excess scanning capacity and the duplication of services that would result from another scanner being added to the New Haven area.

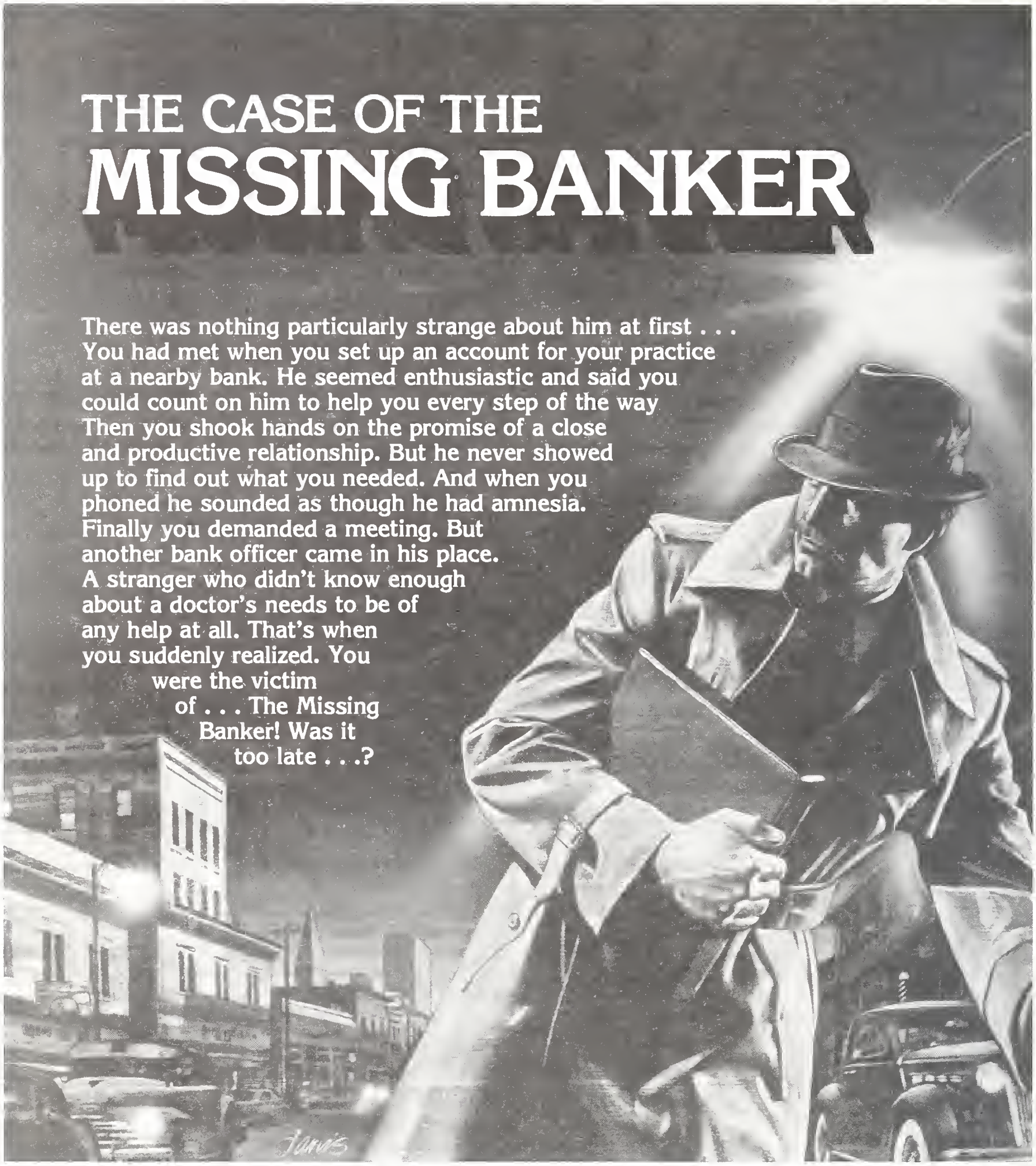
There is error, the judgment is vacated and the case is remanded with direction to dismiss the plaintiff's appeal.

In this opinion the other judges concurred.

## Hospital Admissions of Elderly Rise

Hospital utilization by persons aged 65 and older accounted for 95 percent of the increase in total hospital patient days and over 55 percent of the increase in total hospital admissions between 1970 and 1979, the *VE Quarterly* reported in its spring issue. Although the elderly comprise only 11 percent of the total population, approximately 30 percent of all health care expenditures are directly attributed to this age group, the article noted. The fastest growing portion of health care expenditures for persons aged 65 and older is in nursing home care, with the total nursing home bill climbing to $17.8 billion in 1979. The article recommends the development of cost-effective health care delivery and payment policies that encourage appropriate utilization of services and the expansion of benefits to cover a broader range of health, social, and support services without the requirement of prior hospitalization.

—**HOSPITAL WEEK, March 1981**



THE CASE OF THE
MISSING BANKER

There was nothing particularly strange about him at first . . . You had met when you set up an account for your practice at a nearby bank. He seemed enthusiastic and said you could count on him to help you every step of the way Then you shook hands on the promise of a close and productive relationship. But he never showed up to find out what you needed. And when you phoned he sounded as though he had amnesia. Finally you demanded a meeting. But another bank officer came in his place. A stranger who didn't know enough about a doctor's needs to be of any help at all. That's when you suddenly realized. You were the victim of . . . The Missing Banker! Was it too late . . .?

**It's never too late to put a First Banker to work for you.** First Bankers understand your needs and will help you equip your office . . . design an appropriate retirement plan . . . and invest your short term funds for maximum return. Count on us to help you make the moves that make your assets grow.

First Bank
Member FDIC

WHEN WE GET INVOLVED, YOU GET RESULTS.

| New Haven Region | Western Region | Eastern Region | New London Region | Northern Region | Hartford Region |
|---|---|---|---|---|---|
| 773-7574 | 773-7673 | 773-7174 | 447-3128 | 773-7288 | 278-0730 |
| New Haven | West Haven | Branford | East Lyme | Hamden | Hartford |
| Woodbridge | Derby | East Haven | New London | North Haven | West Hartford |
| Bethany | Milford | Guilford | Waterford | Wallingford | East Hartford |
|  | Orange | Westbrook |  |  |  |

# Emergency Room Utilization: An Initial Look

JOHN T. LYNCH, M.P.H., MARSHA L. SILVERMAN, M.P.H., AND
KATHLEEN M. DELANEY, B.S.

**ABSTRACT - To supplement existing data and provide current, baseline data regarding Emergency Room (ER) utilization in Connecticut, the Connecticut Hospital Association conducted a one-week Emergency Room Survey at 34 of the acute-care hospitals in Connecticut from January 13-19, 1980. The variables: date of visit, time of visit, age, sex, town of residence, primary diagnosis and disposition were recorded for 24,093 visits during the week. While gross inferences regarding ER utilization cannot be made from these data because the one-week sample is not statistically representative, these data can be viewed as providing some support for recent hypotheses aimed at explaining the tremendous growth in ER utilization which has occurred over the past two decades. Analysis of the data show that from 1960 to 1979, while Connecticut population increased only 25% and inpatient utilization increased only 29%, ER utilization increased over 302%.**

## Introduction

Relative to the wealth of research and data available to health planners and hospital administrators with regard to hospital inpatient populations, very little data exists on hospital outpatient populations, including hospital emergency room patients. In recognition of this, in the fall of 1979, the Connecticut Hospital Association (CHA) decided to conduct an Emergency Room Visit Survey for the purpose of compiling baseline data characterizing emergency room (ER) utilization in Connecticut. It was agreed that for this ER survey, each hospital would abstract data for all emergency room visits occurring after midnight on January 12, 1980 and before midnight on January 20, 1980 and send the data to Connecticut Hospital Association for compilation and analysis. The results of the survey are contained in CHA REPORTS NO. 5, EMERGENCY ROOM UTILIZATION, JANUARY 13-19, 1980, 34 CONNECTICUT SHORT-TERM GENERAL HOSPITALS, November, 1980.

## Results

Three graphs were abstracted from the report to illustrate some of the most significant findings of the study.

The graph in Figure 1 shows that volume of emergency room utilization over a twenty-four hour period varies substantially by hour of the day. The graph illustrates a sigmoidal trend where utilization increases sharply from 6:00 a.m. through a 10:00 a.m. peak, holds through 6:00 p.m. and then decreases. The greatest volume of ER utilization occurs between 9:00 a.m. and 6:00 p.m. Emergency Room physicians expressed surprise at the 9:00 a.m. to 10:00 a.m. peak, as they always feel the crunch at approximately 5:00 p.m. One hypothesis is that the 9:00 a.m. to 5:00 p.m. data represent a substantial number of patients being seen by their private physicians in the ER, whereas the post-

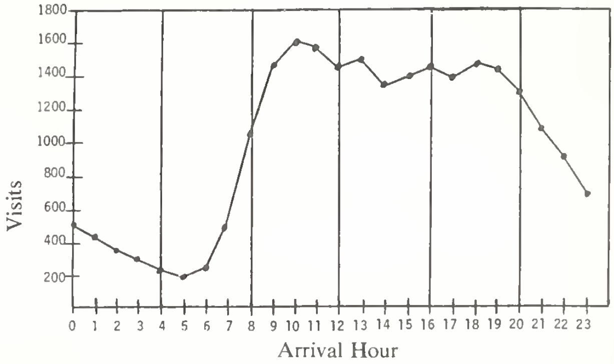


Figure 1
THE CONNECTICUT HOSPITAL ASSOCIATION
EMERGENCY ROOM SURVEY JANUARY 13-19, 1980
EMERGENCY ROOM VISITS BY ARRIVAL HOUR
34 CONNECTICUT SHORT TERM HOSPITALS

---

JOHN T. LYNCH, M.P.H. is associate vice president, data applications at the Connecticut Hospital Association (CHA) in Wallingford. MARSHA L. SILVERMAN, M.P.H., and KATHLEEN M. DELANEY, B.S., were both involved in this study as research assistants.

5:00 p.m. patients are treated primarily by the hospital's ER physicians. Future studies should attempt to distinguish ER utilization by type of physician seeing the patient—private or ER physician.

The graph in Figure 2 examines the data for day of the week variations for the state, and shows that although the volume of ER utilization does not vary significantly by day of the week for any health service region, some variation in utilization can be expected. The one-week sample does not show the greater than expected volume of patients on Saturday through Monday.

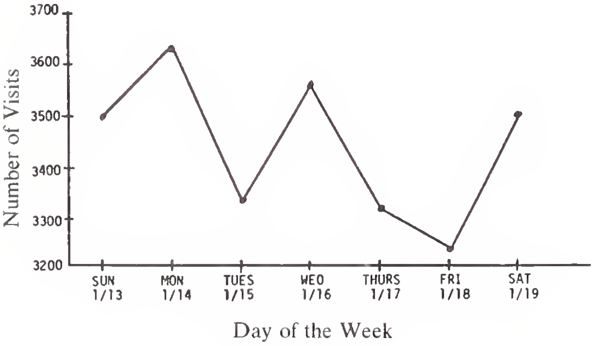


Figure 2
EMERGENCY ROOM VISITS BY DAY OF THE WEEK
34 CONNECTICUT SHORT TERM HOSPITALS
EMERGENCY ROOM SURVEY JANUARY 13-19, 1980
CONNECTICUT HOSPITAL ASSOCIATION

What is unusual about ER utilization? Figure 3 shows a predictable high utilization for the 00-04 and the 75-120 age groups, but it also shows a surprisingly high utilization by the 15-34 year old population. Due to the sheer magnitude of the population and the utilization rate, this age group accounts for 44.5 percent of the ER utilization.

Highlights of some of the other significant findings of the study include the following:

- 53 percent of all ER visits are by males;
- Regionally, the greatest volume of utilization occurred for hospitals in HSA IV, covering the towns of Greater Hartford, Bristol, Southington, New Britain, Rockville and Stafford Springs;
- 11 percent of all ER visits were admitted to the hospital, and admission rates were highest between 2:00 a.m. and 7:00 a.m.;
- Pediatric ER utilization represented 17.4 percent of all ER visits;
- Of patients less than one year of age, 47 percent originated from just three cities: Hartford, New Haven and Bridgeport;
- Origin data demonstrate substantial differences between ER and inpatient service areas, both in hospital and in service community share;

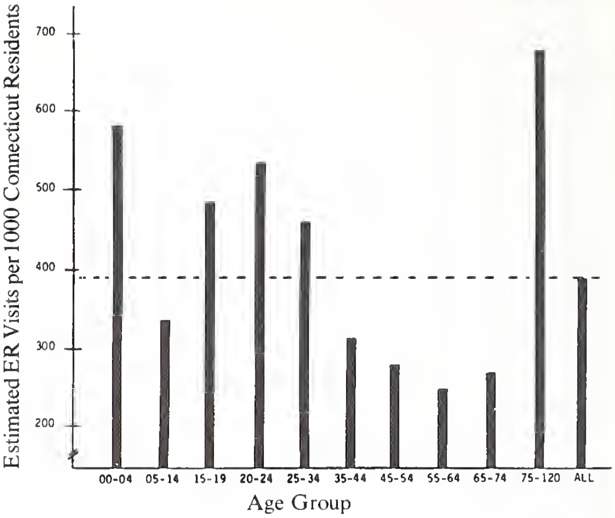


Figure 3
ESTIMATED ER VISITS PER 1000 CONNECTICUT RESIDENTS
BY AGE GROUP
EMERGENCY ROOM SURVEY JANUARY 13-19, 1980 ANNUALIZED
CONNECTICUT HOSPITAL ASSOCIATION

- The very young and the very old utilize services for a small number of specific diagnostic conditions.

Of the diagnosis-specific statistics, the following percentages are of interest:

- Trauma accounts for 36 percent of the ER visits including fractures/dislocations (5 percent), sprains/strains (7 percent), wounds (10 percent) and contusions (7 percent);
- Respiratory system diagnoses account for 13 percent of the ER visits;
- Miscellaneous signs and symptoms account for 8 percent of the ER visits;
- Digestive system diagnoses account for 6 percent of the ER visits.

### Future Projections

From 1960 to 1979, while Connecticut population increased only 25 percent, and inpatient utilization increased only 29 percent, ER utilization increased over 302 percent. Unlike the growth of inpatient admissions, the growth of emergency room visits has not been limited to population growth. Other factors are needed to explain it and future projections of ER utilization will require models tied to more than just population data. One such factor is the comparison of the type of physician treating the patient in the ER—the private physician or the ER staff physician. Another factor worth investigating would be the use of ancillary services such as lab and x-ray that might warrant ER utilization rather than a visit to a private physician's office. A third factor might be the impact of HMOs on ER utilization. Although this study has gone a long way in defining a baseline, additional study is needed to verify or expand on the data and hypotheses presented.

# AMA Policy on Physician's Assistants

## AMA BOARD OF TRUSTEES, COUNCIL ON MEDICAL EDUCATION AND COUNCIL ON MEDICAL SERVICE

At the 1979 Annual Meeting, the House of Delegates adopted Resolution 9, which called for study and reevaluation of the Association's position on physician's assistants. Because the issues involved in such reevaluation encompass educational and legislative as well as practice concerns, a Task Force representing the Council on Medical Service, Council on Medical Education and Council on Legislation was established, to develop recommendations on this subject for transmittal, as a joint report of the respective Councils, through the Board of Trustees to the House of Delegates.

At its first meeting, the Task Force agreed that policy concerning nurses functioning in an expanded medical service role should also be included in its review. Although Resolution 9 (A-79) speaks only of "physician's assistants," nurses who function in such expanded medical service roles may also constitute a major segment of the "physician extender" population, and issues involved in their utilization are perhaps even more complex. Accordingly, the Task Force believes that study of Association policy in this area is equally appropriate.

The following report and recommendations concerning policy on physician's assistants are based on extensive discussion of this subject by the Task Force; policy concerning expanded functioning of nurses will be the subject of a second report by the Task Force at a future meeting. In most cases, the existing Association policy identified in this report is summarized rather than quoted verbatim; however, the House of Delegates action from which such policy has been excerpted is cited in each instance for ready reference.

### Manpower Supply

In 1969, the House of Delegates expressed strong endorsement for the concept of innovation and experimentation in developing new categories of health manpower.[1] In a 1972 report on this subject, it was reported to the House that this "accelerated evolution" in new types of personnel will possibly enable the health manpower pool to expand at a faster rate—by attracting individuals who would not otherwise enter health careers—and thereby assist in increasing the supply of health services.[2]

These statements of policy were adopted at the time of a generally acknowledged shortage of physician and allied health manpower and an emerging concern for more equitable geographic and specialty distribution of such manpower in relation to needs for care. Since that time, progress in increasing the supply of physicians and allied health professions and the number of physicians entering the primary care specialties has been impressive, and significant progress has also been made in improving the access to needed care provided by such health professionals. These achievements, which were detailed in the 1978 CME report on "Physician Manpower and Medical Education, II"[3] have produced the view in some sectors of the federal government that a possible future oversupply of physicians and allied health manpower is developing, with a corresponding need to curtail future federal funding of medical and allied health educational programs as part of the national program to control health care costs.

The forthcoming report of the Graduate Medical Education National Advisory Committee (GMENAC), created in 1976 to advise the Secretary of Health and Human Services on methods "to achieve an appropriate number of physicians in each specialty, to assure adequate financing mechanisms for graduate medical

---

*EDITOR'S NOTE: This is a report of the AMA Board of Trustees, Council on Medical Education and Council on Medical Service to the House of Delegates at its Interim Meeting in December, 1980.*

education, and to achieve proper utilization of other categories of complementary manpower," has expressed similar concerns relative to a possible surplus of physicians generally and in a number of specialties by the year 1990.*

Responding to these types of concerns, the report on "Physician Manpower and Medical Education, II" concluded in part that:

> "Variables such as major fluctuations in the economy, rapid changes in the health field and the national policies that affect it, or the kind of program of national health insurance, may produce severe distortions in the public's demand for medical services. Consequently, long-range forecasts of the numbers of physicians needed remain most tenuous."

The CME report also noted the need for better methods of approximating unmet needs for manpower geographically and by specialty, and stressed that "neither physicians nor other health professionals should be subject to regulation as to number or type. In a democratic society, the freedom to choose a career in a competitive environment should be protected to the maximum degree."

The Task Force reemphasizes the need for continued efforts to improve methods for monitoring the adequacy of the health manpower supply, both geographically and by specialty area, so as to insure the appropriate and efficient expenditure of public funds, and the provision to individuals interested in the health field of information enabling an informed choice of careers. The development and nurturing of the phsyician's assistant came at a time when there was a perceived shortage of physicians and/or physician's services in the late 1960s. The projections for greatly increased numbers of physicians in the near future raise serious questions as to the wisdom of providing additional special subsidies for educational programs for physician's assistants.

> *Recommendation 1:*
>
> The Task Force recommends that legislation to increase public funding for programs to train physician's assistants be opposed.

### Definitions and Terminology

In 1970, the House of Delegates endorsed the following "working definition" of a physician's assistant:

> "a skilled person qualified by academic and practical on-the-job training to provide patient services under the supervision and direction of a licensed physician, who is responsible for the performance of that assistant."[4]

In 1971, the House opposed use of the term "physician's associate" to identify this new occupation, since "associate" commonly implies another physician.[5]

The Task Force believes that the 1970 working definition affords the physician sufficient flexibility to utilize the physician's assistant in the best interest of his patients, while emphasizing his or her responsibility for the PA's direction and supervision, and sees no need for change in this definition.

### Need for Additional Types of Physician Support Personnel

In 1969, the House of Delegates adopted "Guidelines for the Development of New Health Occupations"[1] to provide a frame of reference from which to evaluate the need for any new health occupation, including those designed to function in an expanded medical service role in support of the physician. These Guidelines specifiy desirable steps to be taken and questions to be resolved by any group (such as a medical specialty organization or training institution) attempting to develop a new health occupation. In 1972, the House was informed that appropriate units of the Association were using these "Guidelines" in collaboration with the organizations representing potential physician employers—usually the appropriate medical specialty society—to determine if a national need to develop and use a new category of support personnel existed. When such a need is demonstrated by substantial evidence and the types of functions to be delegated have been clearly defined, a description of the occupation based on the evidence is prepared by the group representing potential employers and reviewed and approved. The sponsoring organization is then invited to collaborate with the AMA and other appropriate groups in the establishment of educational standards and the accreditation of educational programs for the occupation. The House strongly agreed that services rendered by any such new health occupation should be consistent with accepted standards of quality care, and should not duplicate those provided by others.[2] The Task Force believes that careful evaluation of the need, if any, to develop additional new health occupations is even more imperative at the present time, and that such evaluation should be continued along the lines suggested in the "Guidelines for Development of New Health Occupations."

### PA Functions

In accordance with the "Guidelines for Development of New Health Occupations," job descriptions for physician's assistants in the areas of primary care and surgery have been prepared by the appropriate medical specialties and approved by these groups and the AMA. The job description for the Assistant to the Primary Care Physician, for example, is as follows:

---

*Projections of the future supply of medical specialists, physician's assistants and nurse practitioners developed for GMENAC indicate that there are expected to be 536,000 active physicians in 1990, with the active physician-to-population ratio increasing from 182 per 100,000 population in 1974 to 220 in 1990—or from one physician for every 549 people to one for every 455. The proportion of primary care specialists is expected to increase from 38.3 percent in 1974 to 46.0 percent in 1990 if current trends continue. The GMENAC report predicts an overall surplus of 70,000 physicians by 1990, and of 150,000 by the year 2000. On the assumption that federal funding will be maintained at its current level through 1990, the report projects a twofold increase in the number of physician's assistants and Medex (from 8,900 in 1979 to 20,000 in 1990) and a twofold increase in the number of certificate and master's degree nurse practitioners (from 16,000 in 1979 to 31,000 in 1990).

> "The tasks performed by the (primary care) PA are those which require technical skills, execution of standing orders, routine patient care tasks, and such complicated diagnostic and therapeutic procedures as the physician may wish to assign to the assistant after he has attained and demonstrated his proficiency through adequate instruction and for whose provision the doctor is willing to accept responsibility. The PA may be responsible for keeping complete records of all events and results of encounters with patients, whether by direct contact with patients or by telephone. These entries should be consistent in format and content with the entire record kept on the patient."

In 1972 the AMA considered the question of whether a more specific delineation of the types of tasks a PA should or should not perform would be desirable. The House of Delegates agreed that, because of the variation in patterns or settings under which medical care is provided across the country, a national list of permissible functions to be delegated to different types of PAs would be neither practical nor desirable. Instead, the House recommended that the functions appropriate for delegation to the PA should be determined by each individual physician in terms of the capabilities and training of a particular assistant. It was further recommended that such individual "utilization plans be submitted to and approved by the medical licensing authority in that physician's state."[6] In 1977 the House reaffirmed its desire to give the physician flexibility in using a PA and expressed concern at any provisions in state legislation, whether in the medial practice act or elsewhere, that would arbitrarily restrict the physician's ability to delegate routine patient care functions to competent allied health personnel. The legislative delineation of specific tasks to be delegated was veiwed as directly contrary to the interests of good patient care, regardless of the field of medical practice or type of assistant to which such restrictions applied, and the House recommended, in part, that "The physician should be allowed by law to delegate specific procedures to allied health personnel working under his supervision and direction which are commensurate with the competence of such personnel and the needs of the patient."[7]

For this same reason—the need for flexibility—concerns have been raised recently as to the need for requiring the physician to submit an individual "utilization plan" for a PA to the state's medical licensing board for approval. It has been argued by some that such a requirement—present in about half of the state laws governing physician's assistants—may unnecessarily restrict effective supervised performance of the PA and the delegatory authority of the physician as established legally.

The Task Force understands these concerns, but believes that, at the present stage of development of the PA concept, and with the lack of knowledge by many physicians as to the capabilities and limitations of this recently recognized category of allied health personnel, the development of an "individual utilization plan" by the physician is an important element in preparing him to use the PA without jeopardizing patient health, safety or well-being. The Task Force believes that sufficient flexibility is already afforded the physician in that each state may individually determine the parameters of a "utilization plan" and the sanctions to be imposed, if any, for major deviation from the plan. The Task Force does not believe that such utilization plans need to include a "laundry list" of specific allowable tasks, but rather a reasonably detailed description of the manner and the health care settings in which the physician's assistant will be utilized.

*Recommendation 2:*

> Accordingly, the Task Force recommends adoption by the House of Delegates of the following statement relating to functions of the physician's assistant:
>
> A physician's assistant should provide patient care services only in accord with the medical practice act and other applicable state law, and such law should provide that the PA's utilization by a physician or group of physicians be approved by the medical licensing board. A licensed physician or group of physicians seeking to utilize a physician's assistant should submit to the medical licensing board an application for utilization that identifies: the qualifications and experience of the physician's assistant, the qualifications and experience of the supervising physician and a description of his or her practice, and a description of the manner and the health care settings in which the assistant will be utilized and the arrangements for supervision by the responsible physician. Such an application should also specify the number of physician's assistants that the physician or group of physicians plans to employ and supervise.
>
> A physician's assistant should be authorized to provide patient care services only so long as the assistant is functioning under the direction and supervision of a physician or group of physicians whose application for utilization has been approved by the medical licensing board.
>
> The Task Force further recommends that state medical licensing boards, in their review of applications for utilization of a physician's assistant, take special care to insure that the PA functions proposed not be of a type which (a)

> would unreasonably expand the professional scope of practice of the supervising physician, (b) cannot be performed safely and effectively by the physician's assistant, or (c) would authorize the unlicensed practice of medicine.

### Physician Supervision

Until 1979, the Association's position was that appropriate physician direction and supervision did not necessarily require the personal presence or participation of the physician in all instances where the physician extender is providing services. At the 1972 Annual Convention, the House of Delegates agreed that a physician's assistant could provide services in a setting remote from the employing physician when the employment and proposed functions of the physician's assistant in question, both proximate to and removed from the employing physician, had been approved on an individual basis by the Board of Medical Examiners in the state, and where appropriate documentation of this fact was provided. The enactment of legislation to provide for such approval mechanisms in each state was urged.[6]

The need for physician supervision was reaffirmed by adoption of the following statement at the 1978 Annual Convention:

> "The physician's assistant and nurse practitioner should function by direction of and with supervision by a duly qualified licensed physician. The physician must always maintain the ultimate responsibility to provide the degree of overall supervision necessary to assure that high quality medical care is provided to every patient.[3]

At the 1979 Annual Meeting, however, the House modified the AMA position on this subject by adopting the following statement of clarification, presumably to ensure that blanket endorsement not be given for the remote functioning of all physician's assistants:

> "It shall be AMA policy that the personal presence or participation by the supervising physician in the physician extender's activities where the services are rendered should be the standard of care in the usual practice settings. In unusual practice settings, exceptions to this standard of care should be determined and a specific waiver to this standard may be granted by the state medical board on an individual case-by-case basis."[8]

The Task Force notes that earlier Association policy also provided safeguards in this regard, in that such policy—and the legislation now enacted in about half the states—called for determination by the medical licensing board on an individual, physician-PA basis of whether an individual PA may appropriately provide service remote from or without direct participation by a supervising physician. Remote functioning of PAs was not sanctioned as a general method of practice. Such policy also recognized that there are individual situations—particularly in rural physician shortage areas—where provision of service by a PA without on-the-premises supervision or personal participation by a physician is necessary, even if less than ideal. A recent survey of PAs graduated from AMA-approved training programs indicated that, as of 1978, 41% of the respondents are located in towns of less than 50,000 population, including 21% in communities of less than 10,000 and that 13.2% provide services in a remote and/or satellite clinic where a physician is not physically present the majority of the time.[9] Another survey of 19 rural primary care practices utilizing PAs in Iowa showed that physician supervision of PA activities was indirect for 85% of the PA's patient encounters; i.e., the PA consulted the physician about the patient, but the physician either did not see the patient or saw him before or after the encounter with the PA.[10] A third survey showed that in 1978 the states with laws or regulations governing PAs allowed for such flexibility in supervisory arrangements. While these states explicitly or implicitly prohibited PAs from performing patient care procedures except under the supervision of a physician, none of these statutes or regulations defined "supervision" as meaning the physical presence of the physician in the same room or even the same facility, except for specific named functions in some instances.[11]

The Task Force strongly concurs with the need to guard against any blanket endorsement for remote functioning of PAs. However, an AMA "statement of clarification" that identifies personal presence or participation by the physician as "the *standard of care*" in usual practice settings might create legal problems for physicians. Such a statement could shift the burden of proof to the physician in any instance where harm results from services rendered by a PA without the physician's presence or participation, by in effect requiring the physician to prove that his absence from the scene did *not* contribute to the patient's injury.

> *Recommendation 3:*
>
> Accordingly, the Task Force recommends adoption of the House of Delegates on this subject:
>
> The physician's assistant should function under the direction of and supervision by a duly qualified licensed physician. The physician must always maintain the ultimate responsibility to assure that high quality care is provided to every patient. In discharging that responsibility, the physician should exercise that amount of control or supervision over a physician's assistant which is appropriate for the maintenance of quality medical care and in accord with existing state law and the rules and regulations of the medical licensing authority. Such supervision in most settings includes the personal presence or participation of the physician. In certain instances, such as remote practice settings, where the physician's assistant may

function apart from the supervising physician, such remote function (if permitted by state law) should be approved by the state medical licensing board on an individual basis. Such approval should include requirements for regular reporting to the supervising physician, frequent site visits by that physician, and arrangements for immediate communication with the supervising physician for consultation at all times.

The physician's assistant may serve the patients of the supervising physician in all types of health care settings, including but not limited to: physician's office, ambulatory or outpatient facility, clinic, hospital, patient's home, long-term care facility or nursing home.

The state medical licensing board should determine on an individual basis the number of physician's assistants that a particular physician may supervise or a group of physicians may employ.

### Functions of Physician-Employed PAs in Hospitals

The Association has stated that it is appropriate for PAs to provide services to the hospitalized patients of a physician employer, under the direction of that employer, if hospital policy permits it. To assist the hospital medical staff in evaluating and recommending utilization of PAs in the hospital, the AMA in 1973 adopted a statement on "Status and Utilization of Expanding and Emerging Health professionals in Hospitals."[12] This statement called for the medical staff to recommend to the hospital governing authority the extent of functions that could be delegated to such emerging health professionals as PAs, to determine the general qualifications required of members of each of these health professions, and to specify appropriate use of such personnel in the hospital. According to this statement, utilization of the PA should be based on the professional training, experience and demonstrated competency of the PA and the employing or supervising physician, as well as on the description of how the PA was to be used in the hospital setting. Under such a mechanism, the practicing physician who wished to use a PA in caring for hospitalized patients should apply to the credentials or other appropriate committee of the hospital medical staff for approval, and provide the committee with a description of the way the PA would be used, and the functions the PA would perform in the hospital, along with information on the PA's training and qualifications.

The Task Force believes that this Association policy related to physician-employed physician's assistants functioning in the hospital continues to be appropriate, and sees no need for change.

### Hospital Employment of Physician's Assistants

The AMA and the American Hospital Association have been concerned with the potential problems which could arise from the employment by hospitals of physician's assistants.

Both organizations believe that direct responsibility to and supervision by a physician is a critical element in the safe and effective utilization of a physician's assistant in all settings including a hospital. In June 1972, the AMA adopted a recommendation that "a physician's assistant not function as a physician's assistant when he is an employee of and paid by the hospital, or by a full-time salaried hospital based physician."[13] The survey[9] of PA graduates from AMA-approved training programs indicated that about 27% were employed by a hospital in 1978. While some of these individuals may be employed in a more technically oriented non-judgmental capacity, it is probable that others are functioning at a more judgmental level, integrating and interpreting findings on the basis of general medical knowledge and exercising a degree of independent judgment in caring for patients. For PAs exercising independent judgment, the Task Force believes that direct supervision by a designated responsible physician rather than by a health care institution is critical to optimum patient care. However, the Task Force does not believe that the employment status per se of the PA or of his supervising or responsible physician determines the quality of supervision he receives, and sees a strong need for an AMA policy to deal with those PAs who are in fact employed by a hospital.

*Recommendation 4:*

Accordingly, the Task Force recommends adoption of the following statement concerning employment of physician's assistants by hospitals:

While it is preferable and desirable that the physician's assistant be employed by a physician or group of physicians so as to ensure appropriate physician supervision in the interests of the patient, where a physician's assistant is employed by a hospital, the physician's assistant must provide patient care services in accordance with the rules and procedures established by the organized medical staff for utilization of physician-employed PAs functioning in that institution, and under the direction and supervision of a designated physician who has been approved by the state medical licensing board to supervise that physician's assistant in accordance with a specific utilization plan.

### Prescribing by Physician's Assistants

The House of Delegates has not previously addressed the issue of whether a physician's assistant should have the legal authority to prescribe drugs. State laws on this subject vary. Information compiled by the AMA Department of State Legislation indicates that, as of late 1979, fourteen states permit physician's assistants to prescribe drugs either by statute or regulation, but only under the control and supervision of the physician, who is held responsible for the acts of his assistant. Five states expressly prohibit such prescribing by the PA.

A 1978 study by the U.S. Department of HEW[11] notes that, in states where this question is not addressed specifically in the PA statute or regulations, the answer generally depends on an interpretation of the state pharmacy statute. On that basis, the DHEW study estimates that in a total of 18 states (including several without PA statutes or regulations) PAs are prohibited from prescribing any drugs, either by statute, regulation, or advisory legal opinion. Other legal opinions indicate that, in the absence of any specific authorization for PA prescribing, state medical and pharmacy practice acts would implicity prohibit such prescribing—resulting in many more than 18 states with such a prohibition.

Those state laws which do authorize PA prescribing take a variety of approaches to such authorization. Describing some of these approaches, the DHEW study[11] notes that "California prohibits PAs from prescribing drugs except in certain approved pilot projects. PAs are permitted to prescribe drugs in Illinois and North Carolina only after the regulatory agency has approved the physician-PA written protocol listing the drugs which the PA will prescribe. Georgia and Maine require the physician to sign all PA prescriptions. Colorado, Iowa, Michigan, New Mexico, and Washington permit PAs to prescribe drugs, except certain controlled substances. Arizona and North Carolina require the boards of medicine and pharmacy to collaborate on the issuance of regulations governing PA prescriptions. Washington permits PAs to print the physician's name and sign his own name on a blank prescription pad. New York permits PAs to prescribe if the prescription is counter-signed by the physician within 24 hours. New Mexico permits PAs to sign the supervising physician's name to a prescription. Arizona Nevada, and North Carolina further permit PAs to dispense drugs, pursuant to guidelines established by the boards of medicine and pharmacy."

The Task Force believes that the issues involved in such prescribing of drugs by physician's assistants are controversial and complex, as witness the variety of approaches to this question demonstrated from one state to the next. The Task Force is particularly concerned that the statutory and regulatory provisions that authorize physician's assistants to "prescribe" drugs under specified controls or within stated categories of drugs have confused and obscured the more basic question of whether or not physician's assistants have adequate education and training to make the medical judgments of what should be the drug of choice for a particular patient. The existing systems appear to be more nearly like "standing orders" or "protocols" used in a variety of settings to enable non-physicians to initiate prescription drug therapy, when medical conditions for which particular drug therapy would be indicated can be anticipated by the physician and there is a showing that the individual who will initiate the therapy is familiar with the method of action, the side effects and reactions that can be anticipated and is competent to handle such side effects or adverse reactions until a physician can see the patient.

With specific reference to using physician's assistants to make medical judgments as to the drug of choice for a particular patient without the concurrence of a physician or the imposition of careful controls, the Task Force does not believe that this function can be delegated to physician's assistants safely or with assurance that the medical needs of patient will be competently met.

*Recommendation 5:*

Accordingly, the Task Force recommends opposition to legislation or proposed regulations authorizing physician's assistants to make independent medical judgments as to the drug of choice for an individual patient.

## Certification of PAs

In 1971, the AMA endorsed the concept of a national certification program for the physician's assistant.[14] Implementing this action, the Association cooperated with the National Board of Medical Examiners in development of a national proficiency examination for the assistant to the primary care physician, and worked with thirteen other national groups to establish an independent National Commission on Certification of Physician's Assistants (NCCPA). The Commission now certifies those PAs who successfully complete the primary care examination (administered annually) and who meet other criteria, and is studying how to extend certification to PAs working in other specialty areas. The AMA House of Delegates has agreed that such national certification helps maintain high standards in the occupation and will provide the potential physician employer with acceptable evidence of entry-level competency.[15] (It is estimated that 85% of all PAs graduated from AMA-approved training programs are currently certified by the NCCPA.) The House has also agreed that certification rather than licensure is the preferred mechanism for credentialing the PA, in that it allows for greater career mobility and flexibility in utilizing PAs.[14] The Task Force believes that such national voluntary certification of physician's assistants should be continued, and sees no need for change in the pertinent Association policy.

### Accreditation of Training Programs

The AMA is extensively involved in accreditation of educational programs for a number of allied health fields, including different types of physician's assistants. In 1976, the House of Delegates changed the name of the Council on Medical Education's Advisory Committee on Allied Health Education to the Committee on Allied Health Education and Accreditation (CAHEA) and delegated to it the responsibility to accredit allied health education programs. This accreditation by CAHEA is in collaboration with the various medical specialty and allied health organizations concerned with each field, and educational programs for twenty-three different allied health occupations are now accredited by CAHEA, including the assistant to the primary care physician and the surgeon's assistant. Development of educational "Essentials" for a third category of PA—the anesthesiologist's assistant—is now underway.[16] The Association has also agreed that clinical affiliation is an essential element of any educational program for the PA. The Task Force believes that the Association's activities in accreditation of educational programs for allied health fields should be continued, and sees no need for change in the pertinent Association policy.

### Reimbursement

In 1972, the AMA recommended that reimbursement for services of a physician's assistant employed by a physician be made directly to the employing physician, including services provided by a PA in a setting remote from the employing physician, when the employment of the physician's assistant had been approved on an individual basis by the Board of Medical Examiners in that state. The enactment of legislation to provide for such approval mechanisms in each state was urged.[6]

In 1974, this policy was reaffirmed. In instances where the PA is providing services in the physician's office and in conjunction with the physician, it was agreed that the cost of such services would appropriately be part of the physician's charge as is now the case with other personnel he or she employs. When the PA provides physician-like service to a patient under the direction of, but in a location physically remote from or without personal participation by the employing physician, the AMA recommended that reimbursement for such services be at the same level as that for the physician, recognizing that with experience, the physician may find that he or she can reduce charges for services provided by the physician's assistant.[17]

Since 1974, a number of studies have been conducted regarding the financial impact of PAs on medical practice, and the relative costs of providing specific health services by a physician vs. a physician's assistant. The methodology or sample size in some of this research has precluded generalization, and findings to date have been generally inconsistent from one study to the next. As two examples, a study issued in April 1979 by the Congressional Budget Office titled "Physician Extenders: Their Current and Future Role in Medical Care Delivery"[18] concluded that such mid-level practitioners have demonstrated the capability of improving the overall cost-effectiveness of health care delivery. Counting salary and supervisory costs, the CBO estimated that physician extenders are a third to a half less costly than physicians on an hourly basis.* By contrast, a 1979 study by Hershey and Kropp[19] concluded that the economic benefits of adding a physician's assistant to a practice may well have been overstated. The authors found that previous studies of PA productivity (which have predicted productivity gains as large as 90 percent from addition of one physician's assistant to a physician's practice) have overstated these benefits by ignoring off-setting increases in patients' waiting time, waiting room congestion, and practice hours, resulting from an almost doubling of the patient load, as well as increased supervisory requirements. When all these factors are considered, the authors assert that the productivity gain may be as small as 20 percent, and the increase in net income may be negligible.

In view of the conflicting evidence as to the costs of physician's assistants services, the Task Force believes that current Association policy, which recognizes the *possibility* of cost savings to patients through use of the physician's assistant, continues to be appropriate, and sees no need for change.

### State Versus National Regulation

The AMA has emphasized in testimony before Congress and in other statements that regulation of health professions and occupations, including the PA, should be the prerogative of states and not the federal government, and that any national legislation in this area, including the "Rural Health Clinics Act of 1977," should not usurp this state prerogative to set standards concerning the functioning of such personnel.

> *Recommendation 6:*
>
> In view of an announced interest by the U.S. Department of HHS in considering national legislation which would override state regulatory systems for health manpower, the Task Force recommends that present Association policy supporting state prerogatives in this area be strongly reaffirmed.

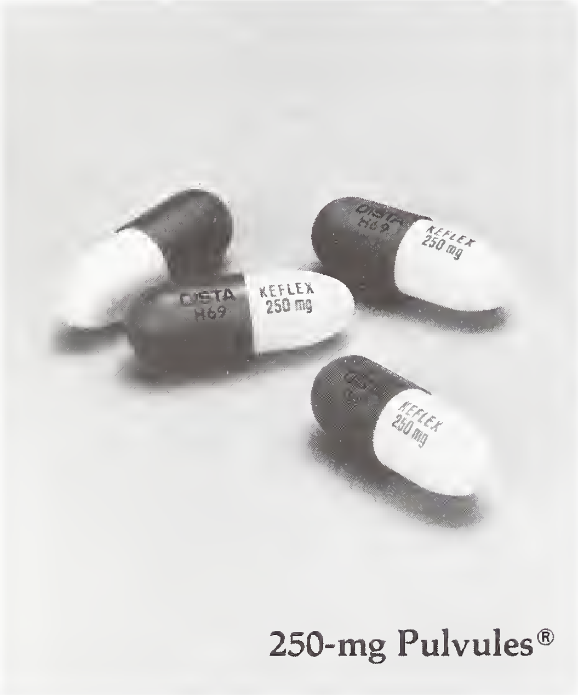
### REFERENCES

References are available on request.

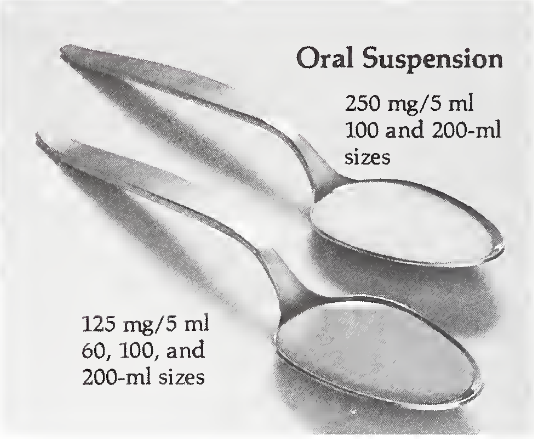
---

*The CBO study also found that physician extenders may actually contribute to an *increase* in total *expenditures* for medical care services because they tend to expand the total volume of services proportionately more than they reduce the price of care.

# easy to take



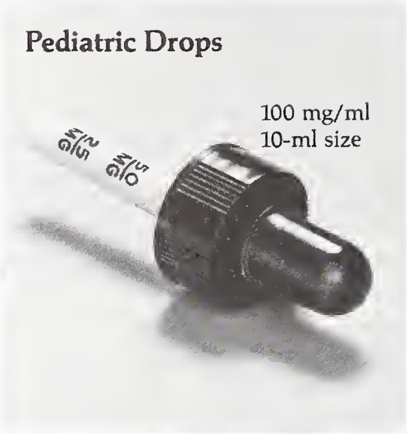
250-mg Pulvules®



**Oral Suspension**

250 mg/5 ml
100 and 200-ml
sizes

125 mg/5 ml
60, 100, and
200-ml sizes



**Pediatric Drops**

100 mg/ml
10-ml size

# Keflex®
## cephalexin

Additional information available to the profession on request.

DISTA
000823

**Dista Products Company**
Division of Eli Lilly and Company
Indianapolis, Indiana 46285
Mfd. by Eli Lilly Industries, Inc.
Carolina, Puerto Rico 00630

# Current Medicolegal Issues

## THE CITATION

### Court Reluctant to Intrude in Medical School Admissions

A suit against 11 medical schools, individual employees of those schools, and the Association of American Medical Colleges (AAMC) was properly dismissed, a federal trial court in New York ruled.

The suit was instituted by a medical student at the Universidad Autonama of Guadalajara, Mexico (UAG) on behalf of all similarly situated qualified applicants from foreign medical schools who were rejected after they applied for admission to the named medical schools under the "Federal Transfer Program." The student claimed seven causes of action for alleged illegal and unconstitutional admissions criteria used by these medical schools.

The student charged the medical schools, individuals and AAMC with: (1) failure to use the admissions criteria published in the school brochures, which the students allegedly relied on to their detriment; (2) intentional misrepresentation and intent to deceive and defraud; (3) violation of the "Foreign Medical School Transfer Program" law, and the "due process" clauses of the Fifth and Fourteenth Amendment; (4) conspiracy to adopt discriminatory admissions criteria; (5) unlawful combinations, contracts and agreements in restraint of trade under the Sherman Antitrust Act; (6) failure to operate for the benefit of members of the community, but rather for the benefit of a select class of people, thereby justifying revocation of tax-exempt charitable status; and (7) violation of individual states' requirements of fairness in the admission process.

After examining each of the student's claims, the court found that the suit should be dismissed. "Courts are properly reluctant to intrude into the academic decision-making process except where invidious abuses are indicated . . . Throughout each and every claim in plaintiff's complaint, he alleges no more than the fact he is a disappointed applicant who wishes he were able to get his medical education in the United States," the court said.—*Selman v. Harvard Medical School,* 494 F. Supp. 603 (D.C., N.Y., May 20, 1980)

### Suit by Child with Toy Lodged in Esophagus Barred by One-Year Statute of Limitations

The discovery rule did not apply to a malpractice suit based on a physician's failure to find a toy lodged in a five-year-old patient's esophagus, a New York appellate court ruled.

In July 1973, the patient complained of difficulty in breathing and swallowing. After examination, the physician said there was nothing wrong. Over the next two years the patient suffered weight loss, became ill and was hospitalized in October 1975. Surgery in March 1976 uncovered a toy lodged in his esophagus.

On March 17, 1978, the patient filed an action for permission to file a late notice of claim in his action against the hospital. A trial court granted permission, but the appellate court reversed. The foreign object exception to the rule that a malpractice action accrued on the date that the act of malpractice occurred did not apply. The patient's cause of action was based on diagnostic judgment or discretion, the court said.

The patient's claim was governed by the statute which existed in 1973. The action was required to be filed within one year of accrual, that is, within one year of July 1973. Since it was not, the action was barred, the court said—*Soto v. Greenpoint Hospital,* 429 N.Y.S.2d 723 (N.Y. Sup. Ct., App. Div., June 30, 1980)

### $135,000 Award to Patient Who Fell While Unattended

Expert testimony was not needed in a suit against a hospital involving a charge of negligence based on

---

*THE CITATION is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.*

careless administration of approved medical treatment, a Florida appellate court ruled.

A patient was undergoing physical therapy because of a cerebral stroke that left her with a residual disability. Although her physician had given orders that she be attended at all times, a physiotherapist left her unattended in a standing position for a brief moment. The patient fell and fractured her hip.

In a suit against the hospital, the trial court found negligence in care and treatment of the patient and that her injuries were superimposed on an existing impairment resulting from a stroke. The court awarded damages of $135,000.

On appeal, the hospital contended that the patient had failed to prove the standard of care used by hospitals in the community under such circumstances and had failed to prove that the hospital had fallen below the standard. The court found that the case involved a charge of negligence based upon careless administration of approved medical treatment and that expert testimony was not needed to reach a conclusion.

The court said that the facts spoke for themselves. The physician had ordered that the patient be out of bed "with help only" and that the therapist give her "standby assistance" and "protect her from falling." The court found that the therapist took a chance and left the patient unattended for a brief moment, long enough to produce the results that the physician's orders intended to prevent.

The hospital also contended that the award of damages was excessive. The court found that determination of the amount of damages was a matter for the trier of facts and affirmed the judgment of the trial court—*South Miami Hospital v. Sanchez,* 386 So.2d 39 (Fla. Dist. Ct. of App., July 22, 1980)

---

## U.S. Liable for Failure to Tell Patient of Tumor

A veteran who underwent amputation was entitled to $518,030.10 in damages from the government, a federal trial court in Oklahoma ruled.

In November 1972, the patient was examined in a VA hospital after complaining of pain in the area of his left hip and leg. X-rays revealed a tumor on the pelvic bone on his left side. However, the finding was not reported to the patient, and the report from his attending physician did not mention the tumor. The pain continued, but the patient was unaware of the tumor until X-rays were taken at an Army hospital in January 1976. The X-rays showed that the tumor had increased in size several times from 1972 to 1976. A biopsy confirmed the tumor to be malignant.

In March 1976, a hemipelvectomy was performed, resulting in amputation of his entire leg and the pelvic bones on the left side. If the presence of the tumor had been revealed in 1972, its removal together with some bone and muscle was all the treatment necessary. The only consequence of such surgery would have been some impairment in function and some limping.

The patient filed suit against the government under the Federal Tort Claims Act for negligence in failing to diagnose or report his condition. The government conceded that its negligence caused the amputation, disfigurement and other damages. The government contended that it was entitled to offset any damage award with an amount equal to the past and anticipated veteran's disability benefits.

Awarding the patient $595,655.26, the court said that the award was $47,321.09 for past lost wages, $248,334.17 in future lost wages and $300,000 for pain, suffering, deformity, disfigurement and mental distress. The court allowed an offset of $77,625.16, resulting in a net award of $518,030.10.—*O'Keefe v. U.S.,* 490 F. Supp. 79 (D.C., Okla., Feb. 21, 1980)

---

## Patient and His Wife Awarded Damages for Swine Flu Shot Injuries

A patient with Guillain-Barre Syndrome and his wife were entitled to damages from the U.S., a federal trial court in Michigan ruled.

The patient and his wife filed suit under the Federal Tort Claims Act for damages the patient suffered after a swine flu vaccination. The government admitted that the patient's Guillain-Barre Syndrome was caused by the swine flu vaccine. The only issue for the trial court to determine was that of damages.

The government was liable for $20,976 for the patient's medical expenses. It was also liable for past intangible injuries of $150 a day for 117 days of hospitalization, $75 a day for 114 days of recuperation at home before returning to work, and $8,000 per year after returning to work on July 22, 1977, to the time of trial (April 30, 1980). For past loss of consortium, the patient's wife was entitled to $100 per day for the 117 days of her husband's hospitalization, $50 per day for the 114 days of his recuperation and $1,000 a year from the date he returned to work until the time of trial.

For loss of earning capacity, the patient was awarded his lost wages before trial, $5,000 a year from the date of trial to April 30, 1987, and $10,000 from April 30, 1987 (his projected retirement date) until September 1, 1992. The court also awarded him $6,000 per year for his 20-year life expectancy for future intangible damages and his wife $1,000 per year for 20 years for future loss of consortium. The total amount was $329,528.—*Draisma v. U.S.,* 492 F. Supp. 1317 (D.C., Mich., June 23, 1980)

*—THE CITATION, Vol. 42, No. 4/December 1, 1980*

# Month in Washington

The American Medical Association has told the Congress that it endorses the thrust of the Reagan Administration's "cap" proposal to control Medicaid costs in support of the President's program to improve the overall economic situation.

Frederick A. Ackerman, M.D., Chairman of the AMA's Council on Legislation, told the Senate Special Committee on Aging that achieving economies in the Medicaid program will not be an easy task. "There can be no question, however, that much can be done to help assure that Medicaid achieves greater cost-effectiveness while maintaining the availability of quality care," Dr. Ackerman said. "States should be able to maintain essential services through greater efficiencies in administration, and by elimination of fraud and abuse through vigorous enforcement of the law and judicious cutbacks where eligibility has become over-extended.

"While the Association has not had the opportunity to examine the legislative details of the Administration's Medicaid "cap" proposal it supports the overall initiatives of the President 'as he seeks to restore some measure of fiscal stability and integrity to our government budget policies.' "

"There can be little question that the American people wish to have the government do whatever it can to stem the rapidly rising cost of living," Dr. Ackerman said. "The nation requires a commitment by government, the private sector and the individual household to do what each can—individually and collectively—to hold down the recent dramatic increase in the cost of living. Where cuts are made across the board to reduce deficit spending, our Association expects that some reductions in federal health spending will also take place."

The Association spokesman did not specifically endorse the Administration's proposed five percent "cap," and asked the Congress to carefully examine whether the use of the Gross National Product deflator was the appropriate tool to determine the "cap."

The AMA spokesman also supported in concept the Administration's proposal to transfer the present numerous categorical health program grants into two block grants—one for basic health, mental health and substance abuse services, and the other for preventive health services.

"The block grant approach," Dr. Ackerman said, "is a way to give the states greater flexibility to determine their own public health priorities and addressing state needs. Likewise, the AMA believes that major economies will be available because of a major reduction in federal administrative expenses and also in state and provider costs incurred in meeting federal regulatory requirements."

The "cap" and block grant proposals reflect a significant shift in the relative responsibilities of the federal and state governments toward health programs, according to Dr. Ackerman. "The proposals represent the view that states are better able to determine the needs of their citizens and to target program funding to better meet local needs. The proposals also reflect the potential cost savings than can be achieved through an end to rigid, expensive and complex federal requirements."

****

The Association has informed the Congress of a number of areas in the Medicare program where both short and long term savings could be made, but warned "it is essential to exercise extreme caution so as to prevent potential disruptions in the program that would adversely effect the vital medical care of the elderly."

Lowell H. Steen, M.D., Chairman of the AMA Board of Trustees in testimony before the Health Subcommittee of the House Ways and Means Committe, identified certain portions of the program where savings could be found and individuals would not be seriously affected.

"Maximum savings should be generated from increased efficiencies in program administration and reductions in fraud and abuse before benefits are reduced," Dr. Steen said.

****

The AMA also testified twice before the Congress in support of the Reagan Administration's plan to phase out the Professional Standards Review Organizations (PSRO) and to simultaneously eliminate federally-mandated utilization review.

Joseph F. Boyle, M.D., Vice Chairman of the AMA's Board of Trustees, spoke for the Association before subcommittees of the Senate Finance Committee and the House Ways and Means Committee on the growing unrest among physicians over the federal direction and implementation of the PSRO program.

"In supporting termination of the PSRO program, I want to emphasize that the AMA remains a staunch

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

advocate of peer review as a mechanism to assure high quality medical care. However, it is our view that in attempting to federalize peer review the government has misdirected the professional objectives of peer review, i.e., to assure high quality care, and has inappropriately focused the PSRO program principally to contain costs.

"Based upon recently released reports by the Congressional Budget Office, the Health Care Financing Administration, and the General Accounting Office, the ability of the government to use the PSRO program as a cost-savings mechanism is highly questionable.

"The Association recognizes the responsibility of the profession to work to assure quality care for patients undergoing medical treatment in this country. I want to assure you that in the absence of government direction and interference the profession will vigorously renew and strengthen private sector peer review activities."

In conclusion, Dr. Boyle explained the Association's change in position on the PSRO program after nine years of support "as a natural, eventual result based upon the growing dissatisfaction that developed from the often fruitless and frustrating efforts to work with the federal bureaucracy and improve the PSRO program."

Dr. Boyle strongly emphasized that the Association's recommendation for the termination of the PSRO program should not be considered a withdrawal of support for professional peer review of medical service to ensure quality care. "What the AMA is rejecting is a federally directed review program where the federal direction is no longer interested in patient care or quality service, but has become devoted to the single-minded purpose of restricting health expenditures."

****

Medical schools must diversify sources of financial support for medical education in light of prospects for reduced institutional aid from the federal government, the AMA has told Congress.

"While the federal role has been significant in the last decade, medical education has also enjoyed support from various other sectors of society," said C.H. William Ruhe, M.D., a Senior Vice President of the AMA. "It will now be incumbent to increase this latter base of support to assist in meeting funding requirements."

Dr. Ruhe told the House Commerce Subcommittee on Health that medical schools must have sufficient resources to provide education of a high quality, and students must have the resources to meet the costs of the education.

The federal program of aid for medical schools comes up for renewal this year under assault from the Reagan Administration, which is seeking deep cuts. Congress was unable last year to complete action on a new health manpower program.

Dr. Ruhe noted in his testimony that the cost of a medical education today can be staggering with annual tuition figures of more than $10,000 becoming commonplace. "We are deeply concerned over the financial burdens being placed on students and the impact of high tuition upon new practitioners."

"The AMA believes that medical education must not be allowed to become limited on the basis of income," he said. "Student assistance must be of the highest priority for government action . . . Without such aid, the potential exists for medical education to become the privilege of the wealthy. The AMA is committed to seeing that financial resources are available to qualified aspiring health professionals."

The AMA official urged a program of guaranteed loans with repayment deferrable through residency training. "Consideration should also be given to interest subsidies for the length of training, and to setting the rate of repayment to the ability of the individual to repay the principal of the loan."

The AMA also supported continued federal assistance to programs of basic nurse training, but opposed legislation to make the Graduate Medical Education National Advisory Committee (GMENAC) a permanent statutory body.

****

The Reagan Administration budget cuts in health and welfare have survived preliminary skirmishes in Congress, raising hopes at the White House that the lawmakers will go along with the bulk of the economy program.

Spokesmen for groups hard hit by the cuts, however, lined up at Congressional hearings to protest the budget chops, arguing that needed health services will be denied beneficiaries and that vital programs will suffer.

The first round of what is expected to be a session-long battle over the size of the health cuts appeared to be going to the Administration as House and Senate Committees begin to act on the budget resolutions that will dictate overall spending limits they must work within.

President Reagan's proposed cuts in Social Security and programs for the unemployed were adopted in principle by the Senate Finance Committee in the first major test of the Administration's goals. With Republicans voting as a bloc, the Committee voted down a series of Democratic efforts to soften President Reagan's economies for a range of programs, including Medicare and Medicaid.

On the Senate Labor and Human Resources Committee, a Democratic assault on cuts was led by Sen. Edward Kennedy (D., Mass.), who was defeated 9-7 on all but a few of his motions to restore funds for health programs. An 8 to 8 tie vote killed a Kennedy effort to add $89 million to the $58 million requested by the Administration for the embattled health planning program, which the Administration wants to kill.

On the House side, the House Ways and Means Subcommittee on Social Security has recommended that the Administration's cut of $2.4 billion be adopted.

****

Medicaid payments to physicians would be raised to the levels allowed for Medicare under a proposal by the National Commission on Social Security.

The bipartisan commission was formed five years ago by Congress to make an exhaustive study of the Social Security System and to submit recommendations for changes to Congress.

In its report, the nine-member commission said "Medicaid's reimbursement rates must be set high enough to enocurage the participation of physicians." Not only should Medicaid fees be lifted to the Medicare level, but "the fees of both programs will ultimately have to be reasonably equivalent to those paid for privately-purchased services, or patients under both programs will be denied access to medical services."

****

The Reagan Administration will not seek to eliminate the Federal Trade Commission's antitrust authority but is recommending deep cuts in the agency's appropriations. An earlier report that the FTC's antitrust division was imperilled has been denied. Over the next three years, the Administration wants to scale back the FTC's budget from $78 million to $41 million. The antitrust activities of FTC often parallel those of the Justice Department. Many of the FTC's actions against medical and health related organizations involving codes of ethics, advertising, etc., have been FTC antitrust cases.

****

Major drug manufacturers plan a Commission to collect and distribute basic research leads for drugs to treat rare diseases.

Lewis Engman, President of the Pharmaceutical Manufacturers Association has told Congress that through the Commission's work "every interested scientist and research institution, every society concerned with a rare disease, and every potential sponsor will be able to obtain information about the compounds and research leads of investigators who wish to use this mechanism."

The new Commission on Drugs for Rare Diseases was announced before a hearing of the House Commerce Subcommittee on Health. Engman said 40 products have been marketed since 1970 for use in rare diseases and another 39 have been made available for research on patients.

As examples, he cited Demser (metyrosine) which treats conditions caused by pheochromocytoma, a rare tumor of the adrenal gland; and Vira-A (vidarabine) which treats rare herpes infections of the eye and brain.

Engman also urged administrative reforms by the Food and Drug Administration to make new drug approval less difficult and costly. The average cost of taking a promising new drug from discovery to market approval today exceeds $70 million, he said.

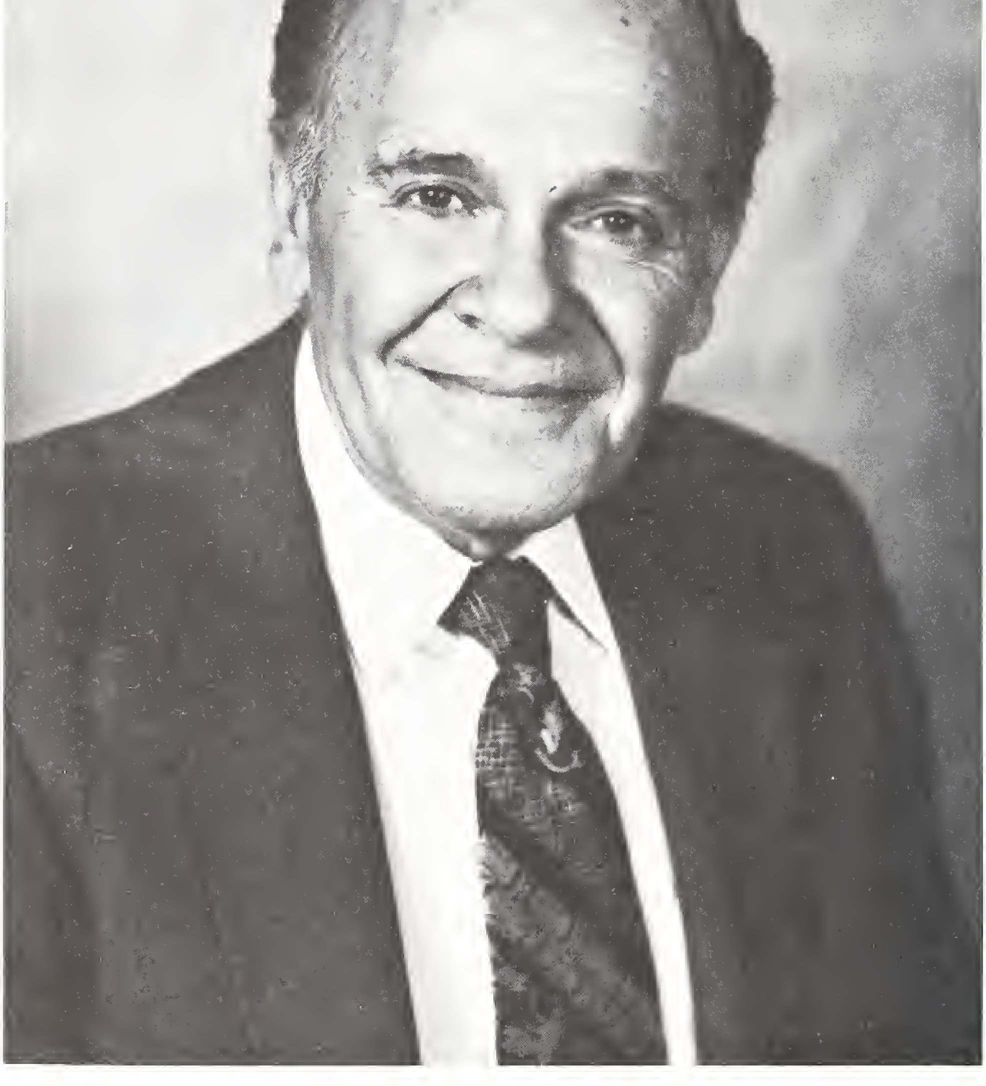
****

A sharp decline in the installation of computed tomography (CT) scanners in the past two years may indicate the market is reaching its limits, according to a study by the Congressional Office of Technology Assessment.

Although critics have blamed government interference for inhibiting scanners, the OTA study said "the real boon to diffusion and use of the CT scanner has been in the government's almost open-ended commitment to pay for CT scans."

The OTA said it is concerned about regulatory approaches being considered to control CT scanners and other technologies in the absence of definitive scientific information on their efficacy and safety that would permit wise decisions by federal officials or insurance companies.

The U.S. has the greatest number of CT scanners per population, with 1,471 last year.



ANDREW J. CANZONETTI, M.D.
President

# ANDREW J. CANZONETTI, M.D.

**Born:** New Britain, Connecticut - September 1, 1920

**Education:**

New Britain Senior High School
Ohio University - A.B. 1941
University of Chicago Medical School - M.D. 1944
Internship: Boston City Hospital - 1944-1945
Surgical Residency: (Harvard Unit) Cushing Hospital VA 1946-1949
Senior Surgical Residency: New Britain General 1949-1950
Pathology Fellowship - July-December 1950

**Certification:**

Diplomate American Board of Surgery - 1950
American Board of Abdominal Surgeons

**Practice:**

Private Practice Surgery 1950-1972
Senior Attending Surgical Staff - New Britain General Hospital and Bradley Memorial Hospital
Former Deputy Chief, Surgery - New Britain General Hospital
Former Chief, Surgery - Bradley Memorial Hospital
Corporate Medical Director, Scovill Inc. - 1972 - present

**Professional Associations:**

New Britain Medical Society - Past President
Waterbury Medical Society
Hartford County Medical Association - Past President 1970-1971
A.M.A.
New Haven County Medical Society
  President-Elect - 1980
  AMA Alternate-Delegate 1974-1980
  Chairman of Council 1977-

**Medical Organizations: Peer Review**

President Hartford County PSRO and Health Care Plan - 1971-
Board of Directors, American Association of PSROs 1975-1980
President Statewide PSRO Council 1980-

**Military Service:**

U.S. Navy Medical Corp - 1946-1946 South Pacific
1952-1954 Korean Theater

**Community Service:**

Chairman, New Britain School Board 1956-1960
Chairman, New Britain Democratic Party 1968-1972
Member, State Democratic Central Committee 1972-1976
Member, University of Connecticut Board of Trustees 1976-
Chairman, University of Connecticut Board of Trustees 1980-
Charter Commission Chairman, New Britain 1977

**Awards:**

Phi Beta Kappa
Alpha Omega Alpha 1943
Ether Prize - Boston City Hospital 1945
Anatomy Fellowship - University of Chicago 1942
Red Feather Award - New Britain Community Chest
Good Government Award - New Britain Jay-Cees
Distinguished Service Award - Hartford County Medical Society 1979
Education Award - Teachers Federation - 1959

# The President's Page

## The Death of a Symbol

When medical history of the 1970's is reviewed, 1972 will stand out as the year of the greatest challenge and the greatest opportunity American medicine was ever given to resolve its own destiny.

The PSRO movement, which was authorized by the famous Bennett Amendment to the Social Security Act, enabled groups of physicians to control their economics and their practice patterns in a manner given no other profession. If you recall those days, the criticism from skeptical observers was usually that the bill permitted "the fox in the chicken coop." Doctors, it was claimed, could not be trusted to police their behaviour; their economic needs would override honesty in the judgments demanded by the law. The skeptics were wrong.

The Bennett Amendment (PSRO) charged our profession with establishing standards and guidelines for assuring that required medical services were offered in the most appropriate setting for the interests of the patients and that the *quantity* and *quality* of those services were to be judged for appropriateness by a true peer group—physicians in that community. (Whereas, the original amendment hardly mentioned quality of care, it was a good sign that the concept of quality care was eagerly accepted by those working with PSRO's.) Medical Care Evaluation studies were mandated on the part of hospital staffs working with PSRO's to help resolve problems of medical quality.

During the past five years of PSRO activity several facts have become evident in areas where PSRO management and physician involvement were honestly aggressive:

1. Lengths of stay in hospital settings were lowered.
2. Days of hospitalization/1000 were lowered.
3. Practice patterns of M.D.'s were often changed with greater attention to orderly procedures in hospital settings.
4. The quality of MCE's was improved and the sharing of MCE's resulted in improved care for many areas.
5. There was a net savings in the over-all cost of medical care in well run PSRO areas.
6. No honest physician was denied proper access for his patients.
7. Appeal mechanisms were fair and multiple.

These have been difficult years with many physicians reluctant to accept any oversight despite its peer orientation. Attempt after attempt has been made to "kill" the PSRO movement. In December 1980 the AMA House of Delegates in a 104 - 100 vote, with over 60 delegates not voting, approved a resolution favoring abolishing PSRO's. In February 1981 President Reagan indicated a budget pattern which will starve PSRO's in 1981 and 1982 and destroy them in 1983.

I am convinced that physicians are going to be the long-term losers if the PSRO's are not resurrected. In my personal experience those who have moaned the loudest about PSRO restrictions have come from hospitals with the greatest need for discipline and change. If physicians are unhappy with standards and guidelines they themselves have helped formulate what will be their attitude about those thrust upon them in the future by some fiscal intermediary. How will the hospitals respond to renewed denials of payment by FI's who are not required to delegate control to another agency.

The PSRO's were a *symbol* of trust. The government entered into a personal relationship with physicians and allowed them a great voice, a great presence in helping preserve American medicine. Too many of us may have taken this symbol of trust too lightly. It appears dead.

Andrew J. Canzonetti, M.D.
*President*

# Reflections from the Dean's Office

## Time for Change?

ROBERT U. MASSEY, M.D.

As the academic year draws to an end, both faculty and students reflect on the year of teaching and learning, and all the old issues come forth like the spring flowers, no different from previous years but clearer in the light of the new spring.

Talk about change is easy, but real changes, thank heaven, occur rarely. Curriculum committees and administrators must be vigilant to keep trivial innovations related to some passing fashion from adding their accretions to an overloaded program. That is a matter of academic hygiene, and budget restrictions help to dampen enthusiasm for divisions of death and dying or departments of alternative care. Changes in style flourish in times of affluence and social confusion; they require firm management in the lean years.

But the old problems remain. Preserving the best of the past while not neglecting the important present; giving the works of the mind and the works of the hand each their due, and recalling that art, including the art of medicine, demands both; being mindful that learning requires reflection, and that a liberal education should liberate the vision, and a professional education should sharpen it—all of these counsels should guide our decisions to change, but are more often the sources of our discontent.

Carleton Chapman takes medical education to task in the most recent *Annual Report* of the Commonwealth Fund. He speaks of "the simple fact that medical education separated from its natural associations and ties with the content and intent, as I comprehend them, of liberal education, becomes an unmanageable and incomprehensible monster—."[1] His subsequent paragraphs are not softer. He quotes K. Danner Clouser:

> ". . . (Medical) students generally do not understand science. They have little grasp of how it works, of what its genius consists, what theories are, how they are tested and what defeats them . . . Science for them is a catalogue of facts— complete and beyond question."[2]

Generalizations like that make useful rhetoric, but should not be passed over for that reason; the rhetoric comes when temperate admonishments have failed to arouse.

Doubtless few students understand science in Professor Clouser's sense: educated men and women understand science as systematized knowledge, but not as method. They think of science as applied, and not the powerful tool that Eddington called *scientific epistemology,* and which is a matter for philosophy far beyond a mere catalogue of facts.

Lyman Stowe, the first dean of the University of Connecticut School of Medicine, proposed a curriculum based upon the Stanford Plan, one of whose tenets is that all education is a *continuum:* that medical education should derive from general or liberal education, and that where there is separation, bridges must be built.

Ludwig Eichna recently said much the same thing: "Medical education is a continuum, binding college education, medical-school education, and post graduate house-officership training into a unified whole."[3]

Changes come slowly. Evolution results in new forms only when external conditions require them; the eighties will be a time for change, because of the new biology, the new economics, the new technologies, and the mood for change that seems to accompany the *fin de siecle* years.

Fifty years ago, the Commission on Medical Education of the Association of American Medical Colleges recommended that "pre-medical education should be general, not preprofessional -," and said this about medical education:

> "Some of the chief difficulties in medical training arise from efforts to provide instruction in too many subjects in too great detail. These endeavors have created great overloading of the curriculum. The dependence upon sheer memory tends to defeat the development of a scientific attitude and point of view. This makes the application of sound educational methods almost impossible, for the intellectual development of students cannot occur in a breathless, hurried, pressing schedule of assigned exercises."[4]

That is work for a curriculum committee for a year, or a decade.

### REFERENCES

1. Chapman, CB: 1980 *Annual Report,* The Commonwealth Fund, p. 1
2. Ibid., p. 4
3. Eichna, LW: Medical-School Education, 1975-1979, A Student's Perspective, N Engl J Med, 303: 727-734, 1980
4. Final Report of the Commission on Medical Education, New York, 1932, p. 174

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

**FOR STRESS PATIENTS**

(Chronically Ill, Postoperative, Infection, Inadequate Diet, Alcoholism, Surgery, Burns, Fractures, Febrile Illness, G.I. Disorder, Diabetes, Pregnancy and Lactation)

## ON B.I.D. DOSAGE... ONLY ONE B-COMPLEX WITH C PROVIDES A SMOOTH, CONTINUOUS, PREDICTABLE RATE OF RELEASE THROUGH MICRO-DIALYSIS DIFFUSION 24 HOURS A DAY

# B-C-BID Capsules

## B COMPLEX WITH C

For stress situations, good nutrition or whenever B-Complex with C is indicated...B-C-Bid is better. Its exclusive delivery system (sustained release through micro-dialysis diffusion) provides a smooth, continuous release of essential vitamins which frees your patients from the "peak and valley" effect of ordinary capsules or tablets...without regurgitation or after-taste.

Your patients deserve the predictability that only B-C-Bid can offer. The clinical results suggest that you prescribe it.

249-1153-002
B-C-BID
CAPSULES
B Complex with Vitamin C
Sustained Release
By Micro-Dialysis Diffusion
Dietary Supplement
Formula developed and distributed by
GERIATRIC PHARMACEUTICAL CORP.
FLORAL PARK, NEW YORK 11001
Pioneers in Geriatric Research
100 CAPSULES
GPC GPC

EACH B-C-BID CAPSULE CONTAINS:

| | |
|---|---|
| Vitamin B-1 (Thiamine Mononitrate) | 15mg |
| Vitamin B-2 (Riboflavin) | 10mg |
| Vitamin B-6 (Pyridoxine) | 5mg |
| Niacinamide | 50mg |
| Calcium Pantothenate | 10mg |
| Vitamin C (Ascorbic Acid) | 300mg |
| Vitamin B-12 (Cyanocobalamin) | 5mcg |

DOSAGE: For continuous 24 hour therapy, one capsule after breakfast and one after supper.

Samples on request.

**GERIATRIC PHARMACEUTICAL CORP.**
**397 JERICHO TURNPIKE, FLORAL PARK, N.Y. 11001**

PIONEERS IN GERIATRIC RESEARCH
DEVELOPERS AND SUPPLIERS OF CEVI-BID • GER-O-FOAM • ISO-BID

**AVAILABLE ONLY THROUGH THE MEDICAL PROFESSION**

# Criteria for Determining That Death Has Occurred: III

JOSEPH M. HEALEY, J.D.

On Tuesday, March 17, 1981, the *Bacchiochi* case[1] was withdrawn from the Hartford Superior Court. This action followed four days after the removal of the support systems from Melanie Bacchiochi. Despite the fact that this case attracted a good deal of attention in Connecticut, its implications for Connecticut physicians are not entirely clear. Because of the withdrawal of the case, no formal legal decision was reached. Because the case was heard in the Superior Court, even if a formal decision had been reached, its value as precedent would have been limited. The absence of a formal legal decision reinforces its limited value. Nonetheless, some consolation can be derived from the apparent manner in which Judge Hammer handled the complicated issues presented by the case. It appears that Connecticut, in its first major case dealing with these issues responded in a manner consistent with the approaches of other states, as discussed in the previous two columns.

The law has traditionally regarded the judgment that death has occurred to be a question of fact, determined by a physician in a manner consistent with clinically acceptable criteria. Therefore, the two major areas of potential legal liability are the selection of clinically acceptable criteria and the application of this criteria to the facts of a specific case. In determining clinically acceptable criteria, physicians are expected to reflect the current state of medical knowledge. Support for the use of brain death criteria has been widespread. It is ironic that during the unfolding of the Bacchiochi case, the *British Medical Journal* published one of the most thorough reviews of clinical criteria for diagnosing brain death.[2] The researchers reviewed 447 published cases involving patients diagnosed as brain dead, 609 patients from three neurological services, and prospective data on 1003 survivors with severe head injuries. The researchers were unable to find any cases in which recovery occurred after brain death had been properly determined. This research provides the latest evidence of the acceptability of brain death criteria in the determination that death has occurred. Such general acceptance, of the concept of brain death, however, has not eliminated confusion about the criteria used to determine that brain death has occurred. The *British Medical Journal* article, citing an earlier *New England Journal of Medicine*[3] article, points out that more than 30 sets of criteria have been published. However, these 30 sets contain a common core of four parts:

> "(a) the establishment of irremediable structural brain damage; (b) the exclusion of reversible causes of unresponsiveness; (c) the demonstration of absence of brain-stem function by clinical tests; and (d) confirmatory investigations."[4]

Should questions arise about the acceptability of one particular set of criteria, these questions are likely to be resolved at trial by the introduction of expert testimony establishing clinically acceptable practice.

The second area of potential liability involves the application of the criteria to a specific case. It goes without saying that the determination that death has occurred can only be made after all of the criteria have been satisfied. As in other areas of medicine, physicians' decisions in this area must reflect careful and appropriate exercises of clinical judgment.

In the wake of the *Bacchiochi* case, there have been renewed efforts to embody brain death criteria in statutory form. While I have no objection to these efforts, it is my judgment that such a statute would simply reinforce that which is already the law of the State of Connecticut.

---

JOSEPH M. HEALEY, J.D., Assistant Professor of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, CT

REFERENCES

1. *Bacchiochi v. Johnson Memorial Hospital* (Superior Court, Hartford, County) 1981
2. Jennett, Bryan, *et al*, Brain Death in Three Neurosurgical Units, *British Med J*, Vol. 282, 14 February 1981, 533-538
3. Black, PMcL., Brain Death, *N Engl J Med* 1978; 299: 338-44
4. Jennett, Bryan, *et al*, Brain Death in Three Neurosurgical Units, *British Med J*, Vol. 282, 14 February 1981, p. 533

# Acute pain is no laughing matter.

# The first prescription for the first days of acute pain Empirin® c̄ Codeine #3

Each tablet contains: aspirin, 325 mg; plus codeine phosphate, 30 mg, (Warning — may be habit-forming).

**For the millions of patients who need the potency of aspirin and codeine for their acute pain.**

The pain of fractures, strains, sprains, burns and wounds is at its peak during the first three to four days following trauma. The potent action of Empirin c̄ Codeine begins to work within 15 minutes of oral administration, an important advantage during this acute pain period. Empirin c̄ Codeine has unique bi-level action to attack pain at two critical points: peripherally at the site of injury and centrally at the site of pain awareness.

For the most effective dosage in treating acute pain, begin with... two tablets of Empirin c̄ Codeine #2 or #3, every four hours. Titrate downward as pain subsides.

---

## EMPIRIN® with Codeine

**DESCRIPTION**: Each tablet contains aspirin (acetylsalicylic acid) 325 mg plus codeine phosphate in one of the following strengths: No. 2 — 15 mg, No. 3 — 30 mg, and No. 4 — 60 mg. (Warning — may be habit-forming.)

**CONTRAINDICATIONS**: Hypersensitivity to aspirin or codeine.

**WARNINGS**:

**Drug dependence**: Empirin with Codeine can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychic dependence, physical dependence, and tolerance may develop upon repeated administration of this drug and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral, narcotic-containing medications. Like other narcotic-containing medications, the drug is subject to the Federal Controlled Substances Act.

**Use in ambulatory patients**: Empirin with Codeine may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. The patient using this drug should be cautioned accordingly.

**Interaction with other central nervous system (CNS) depressants**: Patients receiving other narcotic analgesics, general anesthetics, phenothiazines, other tranquilizers, sedative-hypnotics, or other CNS depressants (including alcohol) concomitantly with Empirin with Codeine may exhibit an additive CNS depression. When such combined therapy is contemplated, the dose of one or both agents should be reduced

**Use in pregnancy**: Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, Empirin with Codeine should not be used in pregnant women unless, in the judgment of the physician, the potential benefits outweigh the possible hazards.

**PRECAUTIONS**:

**Head injury and increased intracranial pressure**: The respiratory depressant effects of narcotics and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions or a pre-existing increase in intracranial pressure. Furthermore, narcotics produce adverse reactions which may obscure the clinical course of patients with head injuries.

**Acute abdominal conditions**: The administration of Empirin with Codeine or other narcotics may obscure the diagnosis or clinical course in patients with acute abdominal conditions.

**Allergic**: Precautions should be taken in administering salicylates to persons with known allergies: patients with nasal polyps are more likely to be hypersensitive to aspirin.

**Special risk patients**: Empirin with Codeine should be given with caution to certain patients such as the elderly or debilitated, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture, peptic ulcer, or coagulation disorders.

**ADVERSE REACTIONS**: The most frequently observed adverse reactions to codeine include light-headedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients and some of these adverse reactions may be alleviated if the patient lies down. Other adverse reactions include euphoria, dysphoria, constipation, and pruritus.

The most frequently observed reactions to aspirin include headache, vertigo, ringing in the ears, mental confusion, drowsiness, sweating, thirst, nausea, and vomiting. Occasional patients experience gastric irritation and bleeding with aspirin. Some patients are unable to take salicylates without developing nausea and vomiting. Hypersensitivity may be manifested by a skin rash or even an anaphylactic reaction. With these exceptions, most of the side effects occur after repeated administration of large doses.

**DOSAGE AND ADMINISTRATION**: Dosage should be adjusted according to the severity of the pain and the response of the patient. It may occasionally be necessary to exceed the usual dosage recommended below in cases of more severe pain or in those patients who have become tolerant to the analgesic effect of narcotics. Empirin with Codeine is given orally. The usual adult dose for Empirin with Codeine No. 2 and No. 3 is one or two tablets every four hours as required. The usual adult dose for Empirin with Codeine No. 4 is one tablet every four hours as required.

**DRUG INTERACTIONS**: The CNS depressant effects of Empirin with Codeine may be additive with that of other CNS depressants. See WARNINGS.

Wellcome

**Burroughs Wellcome Co.**
Research Triangle Park
North Carolina 27709

**Connecticut Medicine**

*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
Florence Keller, *Woodbridge*
James D. Kenney, *New Haven*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann. *New Haven*
Maer B. Ozonoff, *Newington*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*
Norman A. Zlotsky, *Rockville*

# EDITORIALS

## A Symposium on Radiologic and Nuclear Medicine Techniques in the Diagnosis of Obscure Infections

This issue of *Connecticut Medicine* contains a collection of papers which were presented at a recent symposium held at Yale Medical School on Radiologic and Nuclear Medicine Techniques in the Diagnosis of Obscure Infections. Recent advances in the fields of diagnostic ultrasound, computerized x-ray tomography and isotopic scanning have provided the clinician with an entirely new array of innovative techniques to aid in the localization of obscure infection.

Ultrasound is now one of the most widely used techniques for the diagnosis of abscesses. This is reviewed by Drs. Rosenfield and Taylor. This technique can be extraordinarily valuable in sick patients since portable examinations can be performed. Fluid collections in the abdomen, pelvis and the chest can be located and aspirated under ultrasound guidance. The ability to scan the same patient on many separate occasions can be particularly valuable with the rapidly changing status of many sick, infected patients. However, pitfalls and limitations exist. Fluid in the bowel must be differentiated by real-time scanning, and the finding of a fluid collection is nonspecific, and requires either clinical correlation, gallium examination or diagnostic aspiration to differentiate from nonpurulent collections. Gas-containing abscesses are particularly easy to miss and careful review of the plain x-ray may be the most helpful way to avoid this pitfall.

Dr. Jaffe's report on two dimensional real time echo cardiography reviews our current experience with this technique as a method of diagnosis of cardiac vegetations as a source of obscure infections. As we gain more experience with this technique, it may prove to be very useful in patients with fever of unknown origin and a clinical picture which is highly suspicious of infective endocarditis.

Dr. Hoffer summarizes the state of the art in gallium scanning. It is an impressively sensitive technique which is especially valuable when the infected locus may be extremely difficult to locate by any other method, such as in an osteomyelitis. It is most useful therefore when there is no clinical hint as to the site of an abscess, or when a fluid collection is seen by other techniques and one wishes to know whether this is an infected collection or merely a loculated effusion or hematoma. It is, however, nonspecific and in clinical practice there is frequent confusion between gallium in the gut or in tumors. The use of this techniqe in the post-surgical patient has limitations since uptake in an operative site is difficult to separate from that due to a wound infection. The differentiation between gas and abscess may require repeat scannings, so a definitive report may not be available for at least 48 hours and the cost is high.

Dr. Jaffe's review informs us that computerized tomography is probably the most accurate way to localize abscesses. Like ultrasound, however, it is also nonspecific in that a fluid collection may be due to infected or nonpurulent material requiring further imaging procedures or diagnostic aspiration. Furthermore, it is expensive and not available in all community hospitals. Even in major teaching hospitals it is not readily available, nor is it likely to become so with the increasing political control of health care.

With the advent of the newer noninvasion procedures, angiography has become the last resort as an effective but highly invasive method. Dr. Glickman reviews our indications for arteriography and interventional radiology in patients with obscure infections. Gradually our philosophy is turning towards diagnostic and even therapeutic aspiration under ultrasound, CT or fluoroscopic control as the final invasive diagnostic method, although in some cases arteriography may be indicated.

Dr. Thakur reports on the use of Indium labelled white blood cells as a method of diagnosis in patients

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

with fever of unknown origin. Purulent collections, being composed of white blood cells can be detected when the patient's white blood cells are selectively labelled with newer radionuclides. Our clinical experience with this technique is still small and the method is still experimental. We need further experience with new radionuclides and we await a study to provide the sensitivity and specificity of this method and its eventual patient cost after FDA approval.

In conclusion, the clinician has an unprecedented array of diagnostic techniques available to him in his search for occult infection. Although these are often highly effective, their indiscriminate use can add unacceptable costs and even delay therapy. There is no universal algorithm for imaging occult abscesses, which tends to be so glibly advocated in the literature. A careful clinical history and examination will often guide the clinician to the most effective imaging modality, while the value of plain radiography to look for characteristic gas collections should not be ignored in a race to use the newer modalities.

Vincent T. Andriole, M.D.
*Professor of Medicine*
*Co-Chief, Infectious Disease Section*
*Yale University School of Medicine*

and

Kenneth J.W. Taylor, M.D.
*Professor of Diagnostic Radiology*
*Yale University School of Medicine*
*Guest Editors*

## The St. Raphael's CT Scanner Decision: Judicial Deference or Judicial Timidity?

By the time that this editorial is published, the Hospital of St. Raphael ("St. Raphael's") may well be on its way, at least on its second try,[1] to obtaining the approval of the Commission on Hospitals and Health Care ("CHHC") to install a CT scanner. But the bedrock principle and rationale relied upon by the Connecticut Supreme Court in affirming the Commission's denial of the scanner on the first go around to St. Raphael's may stand as an obstruction to future applications by hospitals and health care facilities. The St. Raphael's decision will require surely painstaking and thorough statistical and demographic presentation with respect to the Commission's statutory criteria relating to "community or regional need for . . . capital program[s]." Connecticut General Statutes, § 19-73 k.

The court's opinion in the St. Raphael case might, indeed, appear to a layman at first glance to be somewhat contradictory and confusing. The language implies that the Supreme Court was of the opinion that the Hospital presented sufficient evidence of need for the Commission to grant its application—if the Commission chose to. Yet the Supreme Court decision reversed the lower court's (Superior Court's) favorable ruling and reinstated the CHHC's original denial of the CT scanner. The Supreme Court's opinion was based on its finding of "adequate" support for the Commission's conclusion that another scanner in the New Haven community or region would result in unnecessary duplication of services. Before these apparent contradictions can be harmonized, a rudimentary explanation of the nature, scope and function of administrative agencies and courts and an analysis of the concept of judicial review of administrative agency factual determinations would appear to be required.

Administrative agencies such as the CHHC are created by enactments of the legislature, i.e., statutory authorizations of power. The legislature creates an administrative agency by delegating to it the supervision of a specialized problem area of society which requires, in the legislative judgment, detailed regulation. The scope of the administrative agency's power in the specialized area is spelled out in the enabling act, in which the legislature defines for the agency the need for control and the scope, manner and means of treating and regulating the problem area. The Federal Communications Commission ("FCC") and control of the broadcasting media, the Securities and Exchange Commission ("SEC") and regulation of the securities markets, the Nuclear Regulatory Commission ("NRC") and control of nuclear energy, and the State's Department of Environmental Protection ("DEP") (air, water, land) and the Division of Public Utility Control (public utility construction and rates) are examples of the recognition by both federal and state legislative bodies that the power to control and regulate specialized areas should be undertaken by administrative agencies.

Such administrative or executive agencies carry out their powers by promulgating rules and regulations to more clearly define their role to the public and to applicants. They also conduct hearings and decide or "adjudicate" applications, much like the Courts themselves, thus loosely embracing respectively a combination of legislative, judicial and executive functions—or the characteristics of all three branches of our government. Given the specialized concentration of the work of each of the particular agencies, the agencies develop through their expert staffs substantial expertise and experience in the agency's special area of regulation. Working on a daily basis within their specialized area of societal control and supervision, the staffs and membership of the agency are presumed to develop a depth of expertise in the technical problems of regulating, for example, the airwaves, nuclear fission, pollutant travel or, in the case of the CHHC, patient population need for advanced diagnostic equipment. The presumed experience and insight—referred to as administrative agency expertise—in the specialized areas of regulation requires an appellate court reviewing an agency decision to treat the presumptively expert and complicated factual determination with cautious respect and a presumption of validity—at least as to the agency's finding of facts.

The principal characteristic of judicial review of agency action is a cautious deference to the agency's administrative determinations of fact in its area of specialization. The limitations on judicial review are self-imposed by the courts. While in a constitutional sense the judicial branch of our government is not inhibited by the doctrine of separation of powers from reviewing and ultimately declaring laws enacted by the legislature or executive branch orders to be invalid, the courts do recognize a pragmatic limitation on their abilities to invalidate findings of fact made by a lower court or an administrative agency functioning as a trial type factfinder. Limited review of agency findings of fact is a recognition of the courts' functional limitations and also an expression of the court's institutional role.

In a practical sense, the courts are expressly conceding their inability or perhaps the lack of wisdom on their institutional part in any attempt to resift and reanalyze complex factual determinations that present themselves as live disputes at the agency level, but are merely distant and complex written findings by the time that court review is required to be exercised. Courts are better equipped to decide questions of statutory interpretation (what the law means or should mean) or constitutional validity (whether the decision or the statute comports with a constitutional principle) rather than complex factual issues involving technical expertise, which they are viewing from a perspective from the original controversy. Judicial second guessing on the facts cannot be very helpful here.

Thus, the Courts express this principle of limited judicial review by asserting that they will not "substitute their judgment" for that of the agency if the decision of the agency finds support in the record of evidence adduced by that body. The ground rules for judicial review begin with a court according to the agency decision a so-called "presumption of validity" whereby the agency's decision is presumed to be correct at the outset. The issue before a reviewing court is not to second guess the agency and decide for itself whether it would have reached the same conclusion, but to decide whether the record before the agency suports adequately the agency decision.[2]

Of course, errors in procedure or violations of the agency's statute, or other constitutional or legal as compared to factual errors can cause the presumption of validity to be rebutted. And the agency's factfinding is not totally immune from review. Agency action can be reversed if the decision is contrary to the evidence presented before the agency, or if the agency, based on the evidence in the record, has acted arbitrarily, capriciously or in abuse of its discretion in reaching its decision—another way of saying that it is clearly, plainly and patently—not arguably—wrong![3]

The decision in the St. Raphael case thus illustrates this principle of limited judicial review in operation:—that a reviewing court will not substitute its judgment for that of the agency as to questions of fact if there is sufficient evidence in the record to support the factual conclusion. The court in affirming the CHHC's decision was not saying that it necessarily agreed with the CHHC's conclusion as to the lack of need for a CT scanner in the New Haven community. All that the Court was saying was that the CHHC was in a better position than the Court to assess the credibility of the witnesses and determine the weight which should be given to conflicting evidence in an area of expertise and factual resolution committed to the agency's expertise. The court thus deferred to the CHHC's factual findings since those findings, absent errors of procedure or law, comported at least equally with a conclusion of lack of need as they could have been found to comport, with equal validity, with a finding of need! Provided the agency *could* have decided the case as it did, that decision would not be overturned merely because a court on a second look feels it could have—or should have—decided the issue differently.

Despite sweeping deference for the CHHC's findings of fact on the part of the court, the CHHC has not found the courts nearly so hospitable in 29 of the 34 of its decisions which have been the subject of court appeals. In all of the decisions which have been reversed, the courts have found the Commission procedure to be defective in numerous particulars. The most prevalent and useful doctrinal attack on the CHHC decisions has been the theory that the CHHC has used informal "guidelines" as rules of decision[4] when those rules have a substantial impact on the rights and obligations of parties who may appear before the agency, without benefit by the CHHC of affording to the public notice of formal rulemaking and hearing requirements.

Whatever the merit of the consequences of the original denial of the CT scanner to St. Raphael by the Supreme Court's affirmance of the CHHC's denial may be, the route taken by the court was consistent with the limited role of judicial review of agency action. The decision will serve as a reminder to all future applicants before the CHHC to win the battle of the facts at the agency level, lest they face, in the event of an unfavorable agency decision on the facts, a cautious judiciary unwilling to resift and reassemble the administrative factual record to the health care facility's wishes.

Stephen E. Ronai, Esquire

*Stephen E. Ronai is a senior member of the law firm of Ronai, Berchem & Moses, P.C., with offices in New Haven and Milford, CT. Mr. Ronai is a graduate of Columbia College (A.B. 1957) and received his law degree from the Yale Law School (L.L.B. 1960). Mr. Ronai concentrates his practice in the area of state and federal regulation of health care providers, both individual and institutional. Since the advent of the CHHC in 1973, he has made numerous appearances before the Commission and has litigated some of the cases which are cited in this article.*

REFERENCES

1. Subsequent to the Supreme Court's affirmance of the Commission's order denying the CT scanner to St. Raphael's, the Hospital promptly reapplied to the South Central Connecticut Health System's Agency and to the Commission. The Health Systems Agency, which has only advisory authority, easily approved the request, as it had with St. Raphael's first application, and recommended that the Commission ("CHHC") also approve the application. As of March 28, 1981, the Commission had completed one day of hearings with a further hearing scheduled for April 9, 1981. As we go to press, a panel of the Commission recommended approval of the CT scanner with full Commission approval expected at the regular April 14, 1981 Commission meeting. Support for the scanner at the HSA hearings was voiced not only by members of St. Raphael's medical staff, but by Dr. Stephen Rothman of Yale New Haven. Dr. Rothman testified that it is currently impossible for the Yale New Haven unit to service St. Raphael's needs since Yale New Haven is now performing 6000 diagnostic scans per year, a number well in excess of national health planning minimum usage guidelines.
2. Conn. Gen. Stat. § 4-166 through § 4-189 (1981).
3. The Connecticut Administrative Procedure Act establishes the following grounds for reversing or finding agency action to be erroneous. § 4-183(g) provides as follows:

   > "(g) The court shall not substitute its judgment for that of the agency as to the weight of the evidence on questions of fact. The court may affirm the decision of the agency or remand the case for further proccedings. The court may reverse or modify the decision if substantial rights of the appellant have been prejudiced because the administrative findings, inferences, conclusions, or decisions are: (1) In violation of constitutional or statutory provisions; (2) in excess of the statutory authority of the agency; (3) made upon unlawful procedure; (4) affected by other error of law; (5) clearly erroneous in view of the reliable, probative, and substantial evidence on the whole record; or (6) arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion."
4. *Salmon Brook Convalescent Home* v. *Commission on Hospitals and Health Care,* 177 Conn. 356 (1979); *Cheshire Convalescent Center, Inc.* v. *Commission on Hospitals and Health Care,* 34 Conn. Supp. 225, 230, 386 A.2d 264 (1977).

---

## The Bacchiochi Case—Continued

In last month's issue, I wrote an interim report on the case of Melanie Bacchiochi, which involved for the first time in Connecticut judicial determination of the concept of brain death. Though her case was made moot by her death, the issue is still pending because the Legislature has before it a bill adopting the legal definition of total brain death in addition to the traditional common law definition—cessation of breathing and of the heart beat.

First, a brief summary: On January 30, 1981, 23-year-old Melanie Bacchiochi suffered a cardiac arrest while under general anesthesia for removal of four wisdom teeth in the office of an oral surgeon. He resuscitated her and she was immediately transported to the Johnson Memorial Hospital, in deep coma, until she "died" on March 13.

On or about February 11, her attending physicians determined that she had suffered total brain death including her brain stem, the diagnosis which Dr. Sawyer, her attending physician, conveyed to the family. They claimed they then requested him to withdraw the respirator. However, he states there must have been a misunderstanding, that they did not, but even if they had, he would not have done so unless he received immunity from any legal action—though no civil or criminal suit has been brought against a physician for withdrawing a respirator in a like case. He further stated that since her heart was still beating, she was not dead. Legally, he was right—for Connecticut. The present definition is still the unwritten common law.

However, included in our State's Uniform Anatomical Gift Act, passed in 1979, is a provision that recognizes total brain death, but only for the purpose of transplantation. If there had not been this limitation, there would not have been any difficulty, or a court case. Melanie would have been declared legally dead on February 11 when the diagnosis of brain death was made, instead of on March 13 when her heart stopped beating.

On that day, at the end of the four hearings (March 5-13), Judge Harry Hammer ruled that Melanie was totally brain dead, but legally dead only in the context of the UAGA. Though he did not give the legal immunity sought by Dr. Sawyer, or grant the plea by the family that the respirator be withdrawn, he made it clear, unofficially and not in writing, that Dr. Sawyer could act without prosecution. This sentiment was conveyed by Bacchiochi's lawyer. Dr. Sawyer then withdrew the respirator, and she died a legal death minutes afterward when her heart stopped beating—March 13.

On March 17, Judge Hammer convened the interested lawyers in his chambers to legally dispose of the case. Because all agreed that the case had been made academic by her death, he made no formal legal decision. Importantly, the Assistant State's Attorney stated that while there "was no present intention to prosecute in the future in this case," he could not guarantee non-prosecution in such cases in the future, given the still present unwritten common law definition of death in the state.

As pointed out by Joseph Healey, J.D., in this issue, "The absence of a formal legal decision reinforces its limited value." However, Judge Hammer did add an important statement: "The court feels the matter which was present here for its determination is one in which judicial intervention is not necessary or required. The court would just like to state for the record that on the basis of its reading of the applicable cases and the literature on the subject that the issues involved in this case are best determined by the family, by the attending physicians and the hospital involved. And that judicial intervention should be required only where it is necessary to protect those persons who are acting in their professional capacity from possible civil or criminal prosecution." Exactly what influence this statement will have in any future similar case is problematic.

During the next month from this writing (April 15), the Legislature probably will have acted on the bill on "Natural Death" (The Living Will) now pending, including a late amendment generalizing the total brain death provision in the UAGA, added as a result of the Bacchiochi case. Judge Harry Hammer and all the lawyers involved considered the legal issues important for society at large.

Fred Fabro, M.D.

# In Memoriam

**BOWMAN, STUART H.,** Hahnemann Medical School, 1913. Dr. Bowman was a otolaryngologist in the Fairfield area since 1921 until his retirement in 1972. During World War I he served in the U.S. Medical Corps. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Bowman died in Florida February 12, 1981, at the age of 90.

**HORTON, WILLIAM H.,** Boston University, 1940. Doctor Horton was the chief executive officer of Connecticut Medical Service, Inc. (the Blue Shield Plan for Connecticut) from 1951 until he retired as President in 1974. He served in World War II with the Medical Corps of the U.S. Army Air Force in this country, and with the U.S. Army 99th General Hospital in the European Theater; he was discharged with the rank of Major in 1946. He practiced medicine and surgery in North Carolina in 1946 and 1947. Doctor Horton served as medical director to the Commissioner of Welfare for the State of Connecticut from 1947 to 1949 when he was appointed director of medical services of CMS. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Doctor Horton died April 23, 1981 at the age of 71.

**PRESTON, THOMAS R.,** Yale Medical School, 1925. Dr. Preston was a physician, specializing in diseases of the chest, in the Hartford area since 1925 until his retirement in 1967. He was a graduate of Yale University and Yale Medical School. He had served on the staff at St. Francis Hospital after doing his internship there in 1952 and was a member of the courtesy staff at Hartford Hospital. He was a colonel in the Army Medical Corps during World War II and in 1947 joined the state Department of Health, working in the tuberculosis unit. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Preston died March 4, 1981, at the age of 81.

## Measles Mortality—United States 1960-1980

CDC has received reports of 6 deaths attributed to measles in 1980; 3 occurred in preschool children and 3 in adults (Table 1). The patients ranged in age from 11 months to 33 years and lived in 4 states: 1 in California, 2 in Minnesota, 2 in New Jersey, and 1 in Oklahoma. Four patients, including all three 3 preschool children, had pneumonia; the remaining 2 adults had encephalitis. Two patients had underlying illnesses: 1 preschool child had leukemia, and 1 adult had psychomotor retardation. Four of the 6 cases occurred during large measles outbreaks; none of the cases had a documented history of measles vaccination.

From 1960 to 1980, there was a significant decrease in reported measles cases and reported measles deaths in the United States. In 1960-1962—the 3 years preceding licensure of measles vaccine—there was an annual average of 450,051 reported measles cases and 407 measles deaths. For 1980, the provisional number of measles cases was 13,430—a record low and 3% of the average number reported in 1960-1962. The provisional total of 6 measles deaths is 1.5% of the average number reported for 1960-1962.

The reported number of measles deaths has been <100 per year since 1967 and has been ⩽20 per year since 1972. The lowest official total for reported measles deaths is 11 in 1978, the last year for which final data are available from the National Center for Health Statistics.

*Reported by J. Chin, M.D., State Epidemiologist, California Dept. of Health Services; A. Dean, M.D., State Epidemiologist, Minnesota State Dept. of Health; Immunization Program, and W.E. Parkin, D.V.M., State Epidemiologist, New Jersey State Dept. of Health; Immunization Div., Center for Prevention Services, CDC.*

Table 1

EPIDEMIOLOGIC FEATURES OF FATAL MEASLES CASES, UNITED STATES, 1980

| *Age (Years)* | *Sex* | *Complication* | *Underlying Condition* | *Vaccine History* |
|---|---|---|---|---|
| 1 | M | Pneumonia | None | Unvaccinated |
| 2 | F | Pneumonia | None | Unvaccinated |
| 4 | F | Pneumonia | Leukemia | Unvaccinated |
| 19 | F | Pneumonia | Psychomotor retardation | Unvaccinated |
| 22 | F | Encephalitis | None | Unvaccinated |
| 33 | F | Encephalitis | None | Unvaccinated |

**Editorial Note:** The 6 measles deaths in 1980 illustrate that the characteristics of fatal measles cases are the same now as they were in the prevaccination era: pneumonia and encephalitis are the most common causes of death,[1] and underlying illnesses such as leukemia increase the risk of death. Measles case-fatality ratios are highest for prescool children and adults.[2] The most frequent cause of death for young children is pneumonia, while neurologic complications account for a greater proportion of deaths of older individuals.[1] None of the 1980 deaths occurred in school-age children (5-18 years) for whom measles case-fatality ratios are low.[2] This age group has also received special attention in the effort to eliminate measles through vigorous enforcement of school immunization laws.

REFERENCES

1. Barkin RM; Measles mortality analysis of the primary cause of death. Am J Dis Child 129:307-9 1975

2. Englehardt J, Halsey NA, Curtis AR, Eddins DL, Hinman AR; Measles mortality in the United States 1971-1975. Am J Public Health 70:1166-9 1980

*—Morbidity and Mortality Weekly Report, Jan. 1981.*

# "Let Colonial put your Employee Benefits in alphabetical order."

Roland Smith, *Vice President — Trust*
Dave Marotto, *Assistant V.P. — Trust*

We've got the retirement planning experience and investment expertise to enrich your Employee Benefits program. Letter-perfect planning for companies and self-employed professionals.

We're professional Employee Benefit Specialists who work in conjunction with your attorneys and/or accountants. Colonial's pension and profit-sharing experts utilize the most contemporary financial tools and techniques to provide responsible as well as responsive investment management. And we have performance statistics to prove it! Our experts offer you such employee plans as ESOTs (Employee Stock Ownership Trusts), Thrift Plans, Simplified Employee Pension Plans, Defined Benefit Plans, Flexible Funding, Super Keoghs and a variety of other custom-tailored plans to suit your company's objectives.

For maximum experience in planning your Employee Benefits program, call Dave Marotto or Red Smith at Colonial Bank in New Haven 562-6638, Hartford 721-0441, or in Waterbury 574-7655. Colonial Bank is pleased to act as trustee, directed trustee, custodian or investment manager. Our business is enriching your life.

**Enriching your life.**

**Colonial Bank**
Trust Group

81 West Main Street, Waterbury, CT 06702

Major trust offices in:
**Waterbury • Hartford • New Haven**
**Torrington • Derby • New Milford**

Colonial Bank — Trust Group
Employee Benefits Department
81 West Main Street, Waterbury, CT 06702
Attn: D. Marotto

Gentlemen:

☐ Send me more information on your Employee Benefits programs.
☐ Call me for an appointment.

Name ____________________
Title ____________________
Company ____________________
Address ____________________
City __________ State ______ Zip __________

# 189th ANNUAL MEETING
# of the
# CONNECTICUT STATE MEDICAL SOCIETY

## Park Plaza Hotel
## 155 Temple Street, New Haven, Connecticut
## May 27, 1981

### COMMITTEE ON PROGRAM OF THE SCIENTIFIC ASSEMBLY

James E.C. Walker, M.D., Farmington, Chairman
Hugh F. Dwyer, M.D., New Haven
Leo P. Giardi, M.D., Hartford
Edward Dunn, M.D., Waterbury
Ramon N. Kranwinkel, M.D., Danbury

### GENERAL INFORMATION
### READ CAREFULLY

REGISTRATION

The registration desk will be located on the mezzanine floor and everyone attending the meeting is requested to register. There will be no charge for registration and all members of the Society will be given a guest luncheon ticket when and only if they register.

PARKING

There are ample parking facilities at the hotel and in the immediate surrounding area.

TELEPHONE

Telephone messages will be received at New Haven 772-1700.

LUNCHEON

Luncheon will be served in the Ballroom on the mezzanine floor and ALL MEMBERS OF THE SOCIETY REGISTERING WILL BE THE GUESTS OF THE SOCIETY. PLEASE REMEMBER A LUNCHEON TICKET WILL BE GIVEN TO MEMBERS ONLY IF THEY REGISTER.

HOTEL ACCOMODATIONS

Persons who wish to stay overnight at the hotel should make room reservations as soon as possible. Please indicate in your letter that you are attending the Connecticut State Medical Society meeting.

EXHIBITS

All the exhibits will be located on the mezzanine floor. Physicians should take advantage of the opportunity to review what is new and timely by visiting the exhibits.

ALL ACTIVITIES WILL TAKE PLACE AT THE HOTEL UNLESS OTHERWISE INDICATED

HOSPITAL RESIDENTS, INTERNS AND MEDICAL STUDENTS ARE CORDIALLY INVITED TO ATTEND THIS MEETING.

### GENERAL SCIENTIFIC PROGRAM
### WEDNESDAY, MAY 27
### MORNING SESSION

8:15 REGISTRATION—Mezzanine

8:30 - 10:00 MEETINGS OF SECTIONS OF THE SOCIETY
(Listing elsewhere in program)

10:00 INTERMISSION TO VISIT EXHIBITS—Mezzanine

BALLROOM WEST

10:20 CALL TO ORDER AND WELCOMING REMARKS
Andrew J. Canzonetti, M.D., Waterbury, President, Connecticut State Medical Society

*Presiding:* ADRIAN M. OSTFELD, M.D., *New Haven*

### SYMPOSIUM—CRITICAL THERAPEUTIC DECISIONS IN THE AGED

10:30 THE AGED—ARE THEY REALLY DIFFERENT?
IAN R. LAWSON, M.D., Professor, Department of Community Medicine, University of Connecticut School of Medicine, Farmington; Attending Physician, Danbury Hospital

11:10 SPECIAL PROBLEMS IN THE EVALUATION AND TREATMENT OF THE EMOTIONAL DISORDERS IN THE ELDERLY
IAN R. CAMERON, M.D., Chief of Psychiatry at Mt. Sinai Hospital and Hebrew Home and Hospital, Hartford

11:50 USE OF PSYCHOTROPIC MEDICATION IN THE AGED
MALCOLM B. BOWERS, JR., M.D., Professor of Psychiatry, Yale University School of Medicine; Chief of Psychiatry, Yale New Haven Hospital, New Haven

12:30 INTERMISSION TO VISIT EXHIBITS

1:00 LUNCHEON—Ballroom East

## AFTERNOON SESSION

*Presiding:* EDWARD DUNN, M.D., *Waterbury*

### SYMPOSIUM—RISK ASSESSMENT OF ORGAN SYSTEMS IN THE AGED

2:00 CARDIOVASCULAR RISK ASSESSMENT IN THE AGED
PAUL G. BARASH, M.D., Associate Professor of Anesthesiology, Yale University School of Medicine; Director, Surgical Intensive Care Unit, Yale New Haven Hospital, New Haven

2:20 THE PRE AND POST-OPERATIVE EVALUATION AND MANAGEMENT IN THE PATIENT WITH COPD
CARL B. SHERTER, M.D., Director, Pulmonary Disease Service, Waterbury Hospital Health Center; Associate Clinical Professor of Medicine, Yale University School of Medicine, New Haven

3:00 KIDNEY FUNCTION IN THE ELDERLY
HOWARD B. GARFINKEL, M.D., Chief of Nephrology and Hypertension, Danbury Hospital; Clinical Assistant Professor of Medicine, Yale University School of Medicine, New Haven

3:30 PANEL ON CRITICAL CARE OF THE AGED IN THE PERIOPERATIVE PERIOD
*Chairman:* David Drezner, M.D., *Hartford*

*Panel:* Paul G. Barash, M.D., New Haven
Carl B. Sherter, Jr., M.D., Waterbury
Howard B. Garfinkel, M.D., Danbury

4:00 INTERMISSION TO VISIT EXHIBITS
MEETINGS OF SECTIONS OF THE SOCIETY
(Listing elsewhere in program)

---

## WEDNESDAY, MAY 27
## MEETINGS OF SECTIONS OF THE SOCIETY
## MORNING SECTION PROGRAMS

### SECTION ON DERMATOLOGY

12:00 Noon — Trianon Room

*President:* IVAN S. COHEN, M.D. *Fairfield*
*Secretary:* STEPHEN G. ROMEO, M.D., *Manchester*

LUNCHEON—GUEST SPEAKER

Subject: FEVER AND RASH IN THE ACUTELY ILL PATIENT
MICHAEL FISHER, M.D., Associate Professor of Dermatology, Albert Einstein College of Medicine, Bronx, N.Y.

---

### SECTION ON EMERGENCY MEDICINE

8:30 A.M. — College Room A

*President:* JOHN J. PAULHUS, M.D., *Putnam*

CASE PRESENTATION
PHILIP A. STENT, M.D., Associate Professor of Surgery, Chief, Division of Emergency Medicine, University of Connecticut Health Center, Farmington. The House Staff will participate in presentation.

---

### SECTION ON FAMILY PRACTICE

8:30 A.M. — Governor Eaton A

*President:* CARL C. CONRAD, M.D., *Colchester*
*Secretary:* THOMAS L. CRONAN, M.D., *Trumbull*

---

### SECTION ON FORENSIC MEDICINE

8:30 A.M — College Room C

*President:* BERTRAND P. BISSON, M.D., *Waterbury*
*Secretary:* G.S. GUDERNATCH, M.D., *Sharon*

Business Meeting
ELECTION OF OFFICERS
Catherine Galvin, M.D., Chief Medical Examiner for State of Connecticut will join the group to update the procedures and routines required of medical examiners.

4:00 P.M. See program for Section on Pathology

---

### SECTION ON INTERNAL MEDICINE

8:30 A.M. — Governor Eaton E

*President:* ARNOLD M. KOFF, M.D., *Avon*
*Secretary:* EDWARD H. SCHERR, M.D., *New Haven*

CURRENT MANAGEMENT OF ANGINA PECTORIS, ROLE OF SPASMS, BALLOONS, CATHETERS AND SCALPELS
STEVEN WOLFSON, M.D., Associate Clinical Professor of Medicine, Yale University School of Medicine, New Haven

---

### SECTION ON PHYSICAL MEDICINE AND REHABILITATION

8:30 A.M. — College Room E

*President:* PHILIP B. ARNOLD, M.D., *Danbury*
*Secretary:* JOSEPHINE M. FUHRMANN, M.D., *New Haven*

TMJ DYSFUNCTION AND HEAD AND NECK PAIN SYNDROMES
PAUL RIGALI, D.D.S., Wallingford, CT

---

### SECTION ON PSYCHIATRY

11:10 A.M. — Ballroom

*President:* BORIS G. RIFKIN, M.D., *New Haven*
*Secretary:* RICHARD M. SALLICK, M.D., *Norwalk*

SPECIAL PROBLEMS IN THE EVALUATION AND TREATMENT OF THE EMOTIONAL DISORDERS IN THE ELDERLY
IAN R. CAMERON, M.D., Chief of Psychiatry, Mt. Sinai Hospital, Hartford

### SECTION ON PULMONARY DISEASES

8:30 A.M. Plaza Room

*Chairman:* ARTHUR KOTCH, M.D., *Danbury*
*Secretary:* ARTHUR C. DEGRAFF, JR., M.D., *Hartford*

8:30 Business Meeting

9:00 ASTHMA—NATURAL AND UNNATURAL HISTORY
SIDNEY BRAMIN, M.D., Associate Professor of Medicine, Brown University, Providence, RI

10:00 ASSESSMENT OF COST IN THE NON-SMOKING PATIENT
WILLIAM CORRAO, M.D., Associate Professor of Medicine, Brown University, Providence, RI

## AFTERNOON SECTION PROGRAMS

### SECTION ON OBSTETRICS AND GYNECOLOGY

4:00 P.M. Governor Eaton A

*President:* RICHARD F. JONES, III, M.D., *Hartford*
*Secretary:* JOHN M. GIBBONS, JR., M.D., *Hartford*

LASER THERAPY IN GYNECOLOGY
JOSEPH H. BELLINA, M.D., Clinical Associate Professor of Obstetrics and Gynecology, University of Louisiana, New Orleans, LA

### SECTION ON PATHOLOGY

4:00 P.M. Governor Eaton E

*President:* JAMES A.E. SPENCER, M.D., *Greenwich*
*Secretary:* DAVID J. KRUGMAN, M.D., *New Britain*

CLUES FROM THE COVER OR IS ESP NECESSARY IN THE FORENSIC AUTOPSY?
CATHERINE GALVIN, M.D., Chief Medical Examiner, State of Connecticut

### SECTION ON PROCTOLOGY

4:00 P.M. College Room A

*Chairman:* BERNARD J. KAPLAN, M.D., *Hartford*
*Secretary:* SANFORD SAVIN, M.D., *Bridgeport*

LOCAL TREATMENT FOR CANCER OF THE RECTUM
ROBERT L. RUBIN, M.D., Assistant Clinical Professor of Surgery, Rutgers Medical School, Piscataway, NJ

### SECTION ON RADIOLOGY

4:00 P.M. College Room C

*Chairman:* WILLIAM P. SLOVER, M.D., *Hartford*
*Secretary:* ROBERT D. RUSSO, JR., M.D., *Bridgeport*

BUSINESS MEETING

### SECTION ON SURGERY

2:00 P.M. Ballroom West

*President:* CHARLES POLIVY, M.D., *Hartford*
*Secretary:* JOHN SHOUKIMAS, M.D., *Hartford*

2:00 P.M. See General Program

SYMPOSIUM ON RISK ASSESSMENT OF ORGAN SYSTEMS IN THE AGED

4:00 BUSINESS MEETING

### SECTION ON UROLOGY

4:00 P.M. College Room E

*President:* JAMES F. WALSH, III, M.D., *Bridgeport*
*Secretary:* HAIK KAVOOKJIAN, JR., M.D., *Stamford*

UROLOGICAL PROBLEMS AND THEIR IMPORTANCE TO SEXUALITY
PHILIP M. SARREL, M.D., Assistant Professor of Obstetrics and Gynecology and Psychiatry. Yale University School of Medicine, New Haven

### SPECIAL NOTICES
### CONTINUING MEDICAL EDUCATION CREDITS

AMA PHYSICIAN'S RECOGNITION AWARD

The Yale University School of Medicine has accredited the scientific program of the Society's annual Meeting for Category One Credit toward the AMA Physician's Recognition Award. Credit is granted in this category on an hour-for-hour basis.

AMERICAN ACADEMY OF FAMILY PHYSICIANS

The Commission on Education of the AAFP has accredited the scientific program of the Society's Annual Meeting for 4 hours of prescribed credit for the general lectures and the family practice section meeting, and one hour of elective credit for each lecture attended which is presented by the individual specialty sections of the Society.

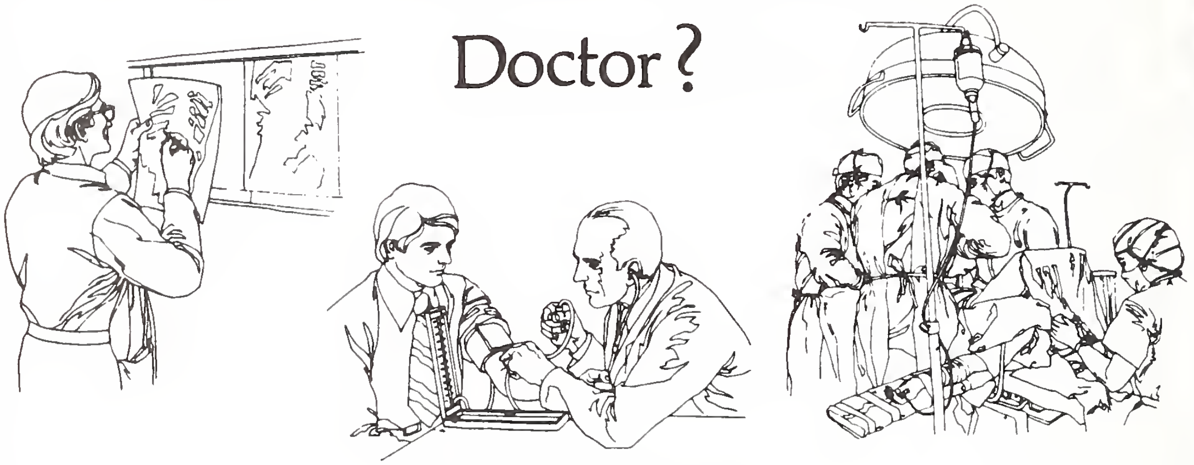
THE CONNECTICUT STATE MEDICAL SOCIETY
acknowledges with thanks education program grants received from:
Eli Lilly and Company, Indianapolis, Indiana
Smith Kline & French Laboratories, Philadelphia, Pennsylvania

**Our exhibits contribute to the value of our Scientific Assembly by presenting goods and services of interest and importance to physicians and their families. Personal visits at the booths will increase your understanding of the materials and programs on display.**

### TECHNICAL EXHIBITS

Aetna Life and Casualty, Hartford, Connecticut
Connecticut Army National Guard
Data Systems of Connecticut, Milford, Connecticut
Equitable Life Assurance Society
William Holmes District, New Haven, Connecticut
Medco Professional Leasing Corporation, New York, New York
Medical Data Processing Corporation, Glastonbury, Connecticut
Med-X Health Services, Newington, Connecticut
Pulmonary Diagnostics, Bloomfield, Connecticut
Sandoz Pharmaceuticals, East Hanover, New Jersey
Sequoia Group, Inc., New Haven, Connecticut
The Upjohn Company, Needham Heights, Massachusetts
U.S. Air Force
U.S. Army Medical Department

# Have you considered participation, Doctor?



**YOU SHOULD KNOW THAT:**

- The maximum allowances in the Century Contract Comprehensive Schedule of Services have been increased twice in the last 10 months. The increases, in the aggregate, amounted to 35.8%.
- It is the goal of Blue Cross and Blue Shield to update the Century Contract schedule on an annual basis.
- Participating Providers receive prompt payment for covered services directly from Blue Cross and Blue Shield.
- Participation can reduce receivables and eliminate the need to bill patients in many instances.
- Over one million Connecticut citizens are Century Contract members for whom claims totaling $68.4 million were paid in 1979.
- Your patients that are Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Physician, please write or call:

Write:
Blue Cross & Blue Shield of Connecticut
Professional Relations
Box 1930
New Haven, CT 06509
Call:
New Haven area: 777-4481
Toll free: 1-800-922-1742

**Blue Cross Blue Shield**
of Connecticut

® Reg Mark Blue Cross Assn
® Reg Mark Blue Shield Assn

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## COUNCIL MEETING

Thursday, April 2, 1981

### Attendance

Present were: Drs. James, Canzonetti, Parrella, Backhus, Mendillo, Sadowski, Hecklau, Hess, Friedberg, Van Syckle, Whalen, Jr., Abbot, Petrie, Jameson, Rubinow, Anderson, Magram, F. Barrett, Doctor, Czarsty, McDonnell, Fabro and Callan.

Also present: Mr. Norbeck, Mrs. Lindquist, Mr. Sweeney, Mr. Brunell and Mr. Fiorentino.

Absent were: Drs. Kamens, Freedman, Zlotsky, Klimas, Beck, Seide, J. Barrett, Shenker, Sonnen and Bates.

### Medical Hall of Fame

It was VOTED to authorize President James to appoint a small committee for the purpose of considering nominees from Connecticut for the Medical Hall of Fame.

### New London Foundation for Medical Care

It was VOTED to provide a letter to Physicians Health Care, Inc., endorsing its application for an initial development grant from the Department of Health and Human Services.

### Annual Reports of Committees, Representatives and Advisors, 1980-81

Two recommendations appeared in these reports:

a) It was VOTED to increase the membership on the Committee on Medical Aspects of Sports from fifteen (15) to twenty (20) members.

b) It was VOTED to ask the Committee on Statewide Medical Planning to develop the concept of retired CSMS members organizing themselves into a chapter to provide social benefits to themselves and appropriate volunteer services to CSMS and the public and report back to the Council.

c) It was VOTED to refer all other reports of committees, representative and advisory, to the House of Delegates with the recommendation that they be accepted as information.

### Fiscal Items

a) **AMA Negotiations Seminar:** It was VOTED to hold an AMA Negotiations Seminar in New Haven, preferably in mid-late September, at a cost not to exceed $2000.

b) **Auxiliary Legislative Meeting:** It was VOTED to approve of the expenditure of approximately $300. to support a legislative day (including luncheon) at the Capitol for the Auxiliary.

c) **Miscellaneous Fiscal Item:** Treasurer Mendillo also reported on a recent meeting held by the Committee on Public Relations. It was VOTED at its meeting on March 31, 1981, to expend $200 for a one-time charge to convert the Sportsmed mailing list to a computer labeling system which will provide an increase in speed, efficiency and maintenance. The committee also approved of an expenditure of $2500 for advertisements (¼ page) in the major daily newspapers in Connecticut pointing out the need for people to take an interest in their health and urging the public to attend the health fairs to be held around the state in early May. Both expenditures will be taken from the funds already allocated to public relations, and the committee wished to apprise the Council of its activities.

### Reports from Physicians Serving on State and Federal Agencies

Dr. Canzonetti reported that the Statewide PSRO Council will probably be closing down about June, due to lack of funds. The financial resources of this agency were down to $11,000 and it did not appear that any more funds would be forthcoming. He further reported that the Hartford PSRO has a similar funding problem. It appears that the funding for this agency will be slowly phased out and that the agency will probably be out of business by 1984. The Fairfield PSRO is also being defunded. Dr. Mendillo reported that the PSRO for the New Haven area is in similar state and that the Long Term Care Study in New Haven has begun to computerize their information, but will not be able to continue the study if funding ceases. A report submitted by Dr. Orvan Hess, "Time for Re-thinking and a New Beginning for Health Planning" which dealt with the phasing

# "Your suit is ready, doctor," said the tailor.

Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

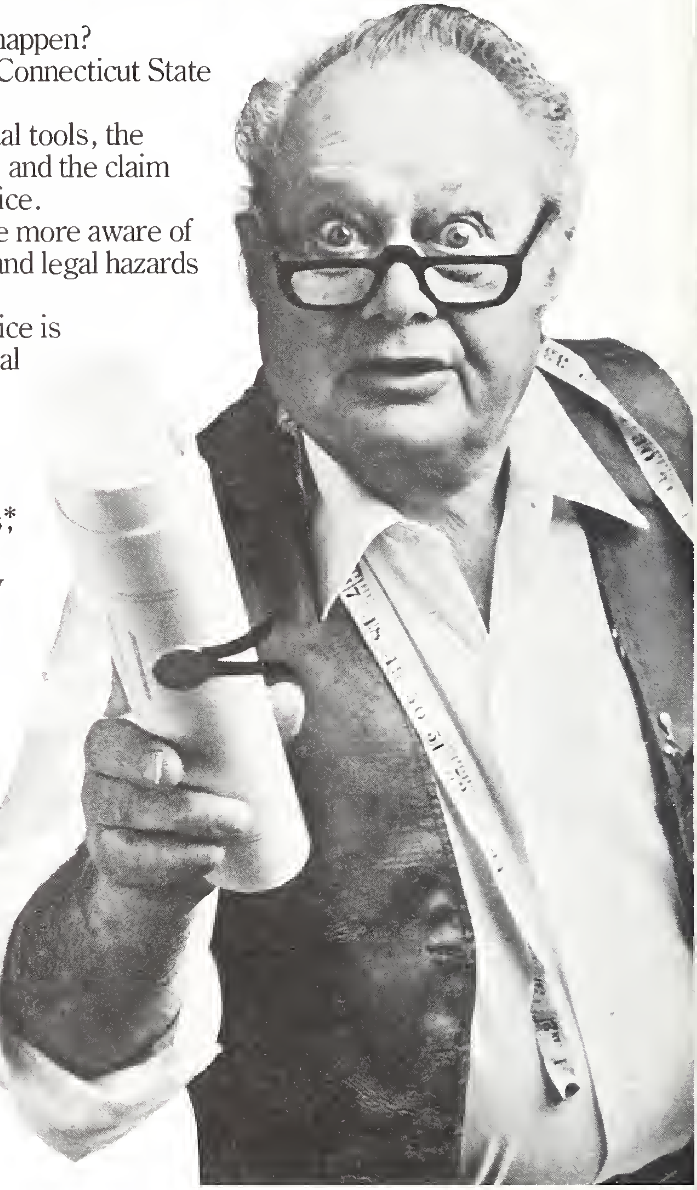
Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs,* 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.

Ætna
LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company



out of HSA's and possible alternatives; and a report on "CSMS Monitoring of Planning and Regulatory Activities" prepared by staff member Richard Fiorentino, were received as information. The Council VOTED to refer this entire subject to the Committee on Statewide Medical Planning with the recommendation that this matter be an ongoing agenda item of the committee. Dr. Rubinow informed the Council as to the latest development in the legislature concerning the Commission on Hospitals and Health Care Costs.

### Resolution on PSRO's

Dr. Isadore Friedberg read a resolution to the Council, the Resolve being as follows:

> "Resolved: That the AMA reconsider its previous action and, be it
>
> Resolved: That the AMA recommend continued adequate funding of those PSRO's already receiving operational status."

It was VOTED that the resolution be referred to the House of Delegates for consideration.

### Report of Ad Hoc Committee on Membership

After discussion, it was VOTED to reconsider the action taken at its meeting on December 18, 1980 concerning the dues assessment, which was, "dues to be waived for student members, and that dues for residents be set at $15 per year." It was further VOTED that dues for medical students be set at $20, of which $15 would be sent to the AMA to pay for membership in that organization. (If the medical student did not wish to be a member of the AMA, the $20 dues would remain with CSMS). It was also VOTED to send every medical student, upon his or her acceptance at medical school, a letter of congratulations and an application for membership.

### Professional Liability Update

The Council discussed the progress of the Society's efforts to prepare an alternative mechanism for professional liability coverage. Dr. Lawrence Ahrens described the plan recommended by the Committee on Professional Liability, a modified claims-made program underwritten by the Medical Insurance Exchange of California (MIEC), and administered by the Marsh & McLennan firm of Hartford. Mr. John Dorsett of American Health Systems spoke concerning the marketability of the plan, and a letter from Dr. Redmond was read also questioning its viability as an alternative. It was reported that the bill for a Connecticut-based independent "captive" company had received a joint favorable report from committee, and stood a favorable chance of passage in the coming weeks. No action was taken by the Council, but it was voted to schedule a special meeting on these matters in two weeks, on April 15 at 2:00 PM.

## COUNCIL MEETING

Wednesday, April 15, 1981

### Attendance

Present were: Drs. James, Canzonetti, Parella, Mendillo, Sadowski, Hecklau, Kamens, Hess, Van Syckle, Abbot, Jameson, Magram, Whalen, Jr., Doctor, Orphanos, Beck, Czarsty, McDonnell, Sonnen and Fabro.

Also present: Mr. Norbeck, Mrs. Lindquist, Mr. Brunell and Mr. Tomat (FCMA).

Absent were: Drs. Backhus, Friedberg, Petrie, Rubinow, Anderson, Freedman, Barrett, Zlotsky, Seide, Barrett, Shenker, Bates and Callan.

A special meeting of the Council was held on Wednesday, April 15, for the express purpose of discussing professional liability options available to the Connecticut State Medical Society. Representatives of Marsh & McLennan presented their claims-made proposal to the Council and answered questions. Following discussion of the Marsh & McLennan proposal, representatives of American Health Systems, the Society's consultant, discussed the AHS proposal to implement and operate a physician owned professional liability insurance company.

After discussion, the Council VOTED to recommend to the House of Delegates that the Connecticut State Medical Society accept the proposal of the American Health Systems. It was also agreed that an abstract of the proposal should be available for each delegate in advance of the April 29 meeting of the House of Delegates.

It was further VOTED that the President, President-Elect and Vice-President be appointed as a nominating Committee to appoint the two separate boards required under the AHS proposal, the names to be submitted to the House of Delegates for ratification.

N. B.: *The foregoing is a summary of the proceedings and actions of the Council on April 2 and 15, 1981. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

AYR INSURANCE AGENCY

ALLENBY H. AYR ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

**ELMCREST**

**A COMPREHENSIVE**
**MENTAL HEALTH TREATMENT CENTER**
**FOR ADULTS AND ADOLESCENTS**

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Allen Cohen,** M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman,** M.D., F.A.P.A.
*Medical Director*

**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY

☐ CRISIS INTERVENTION AND EMERGENCY SERVICES

☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY

☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM

☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION

☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)

☐ GERIATRIC GUIDANCE CENTER

☐ DAY HOSPITAL

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

**...takes dietary restriction, regular exercise, behavior modification, and sometimes the addition of an effective anorectic.**

**prescribe**

# Tenuate® Dospan® ⒸIV

**(diethylpropion hydrochloride NF)**

**75 mg. controlled-release tablets**

**the #1 prescribed anorectic**

## An effective short-term adjunct in an indicated weight loss program

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with certain complications. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on this page.

## In uncomplicated obesity

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

## Clinical effectiveness

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 18 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.[1] And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation." [2] Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate–it makes sense.**
**And it's responsible medicine.**

**Merrell**

**Tenuate® ⒸIV**
**(diethylpropion hydrochloride NF)**
**Tenuate Dospan® ⒸIV**
**(diethylpropion hydrochloride NF)**
**controlled-release**
AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

**INDICATION:** Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

**CONTRAINDICATIONS:** Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

**WARNINGS:** If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence:* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy:* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age.

**PRECAUTIONS:** Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

**ADVERSE REACTIONS:** *Cardiovascular:* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System:* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous.* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

**DOSAGE AND ADMINISTRATION:** Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in midevening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in midmorning. Tenuate is not recommended for use in children under 12 years of age.

**OVERDOSAGE:** Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of January, 1980

MERRELL-NATIONAL LABORATORIES Inc
Cayey, Puerto Rico 00633
*Direct Medical Inquiries to:*
MERRELL DOW PHARMACEUTICALS INC.
Subsidiary of The Dow Chemical Company
Cincinnati, Ohio 45215
Licensor of Merrell®

**References:** 1. Citations available on request from Merrell Dow Pharmaceuticals Inc., Cincinnati, Ohio 45215. 2. Hoekenga, M.T. et al: A comprehensive review of diethylpropion hydrochloride. In Central Mechanisms of Anorectic Drugs, S. Garattini and R. Samanin, Ed., New York Raven Press, 1978, pp. 391-404.

1-6847 (Y257C) MNQ-594

PRINTED IN U.S.A.

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### ANESTHESIOLOGY

Anesthesiologist—part time, contract basis. Contact Dr. John Pierce at Newington Children's Hospital, 181 East Cedar Street, Newington, Ct. Telephone 1-203-666-2461, Ext. 376.

### EMERGENCY ROOM

Emergency Physician—full time position available in modern 226-bed community hospital in eastern CT, 33,000 visits yearly; 42-hr. work week; salary negotiable. Send CV to G.I. Springer, M.D., Chief of Emergency Services, W.W. Backus Hospital, 326 Washington St., Norwich, CT 06360.

### FAMILY PRACTICE

Large adult medical practice now available for immediate sale in New Haven county. Yale-affiliated hospital. Includes offfice and x-ray equipment. Send CV to CSMS/GP-ERH.

For sale—Medical Family Practice. Five exam rooms fully equipped with lab. 2,000 sq. ft. of space. Central CT community location. Contact Mrs. Michael Gualtieri, 55 Forest Ridge Rd., Waterbury, CT 06708.

Opportunity for a young Family Practitioner to take over an active practice on a cost sharing basis. Present Family Practitioner wishes to retire gradually over the next two years. Call 1-203-443-3778.

Solo practice available. Retiring from practice. No charge and equipment free. City located between New Haven and Hartford. Contact CSMS or call 235-0096 after 6:00 P.M.

Well-established family practice of recently deceased physician available. Located in the suburbs of the nation's capital in Arlington, Virginia. Fully equipped office. Please call Mrs. T.A. Moneymaker at (703) 892-5128.

Family practice or internal medicine: Immediate opening for primary care physician to join same in waterfront Connecticut. Community and/or University Hospital teaching opportunities. Subspecialty interests encouraged. Send resume and salary requirements to CSMS FP-IM/JRS.

### INTERNAL MEDICINE

Internists with specialty in cardiovascular diseases seeking Board certified or eligible associate, with eye to partnership. Sub-specialty welcomed but not essential. Located in medium size shoreline community. Send resume and salary requirements to CSMS/IM-RLVDB.

### OBSTETRICS AND GYNECOLOGY

Obstetrician/gynecologist needed for growing multispecialty medical group of an established qualified HMO, affiliated with a medical center and serving 26,000 members. Require strongly qualified physician to work with OB/GYN group, midwives, and primary care physicians to provide comprehensive care. Excellent fringe benefits and salary with this permanent position to begin July 1, 1981 - EOE-M/F. Send resume to: Dr. Ronald T. Rozett, Medical Director, Community Health Care Center Plan, 150 Sargent Drive, New Haven, CT 06511.

### ORTHOPEDIC SURGERY

Two Board- certified Orthopedic Surgeons presently engaged in general orthopedics in Waterbury, CT. Interested in adding new member to organization. Write CSMS/Ortho/MOG.

### OTOLARYNGOLOGIST

Excellent opportunity for Board Eligible or Board certified otolaryngologist in a one man otolaryngology practice. First year salary guaranteed, including malpractice insurance. Attractive Connecticut College community with modern hospitals. Modern office with latest equipment. Qualified staff, including x-ray technician, certified audiologist and ENG technician. Write CSMS OTOL/HS.

### RADIOLOGIST

Full or part-time association for highly competent and personable radiologist having ultra-sound expertise. Private office practice in central Connecticut. Write CSMS RAD/ACH

### SCHOOL PHYSICIAN

Part-time school physician to examine students participating in athletics. Set own hours. Contact Ralph E. Hughes, Bullard Haven Tech. School, Bdgt. Tel. No. 579-6129.

### VARIOUS SPECIALTIES

Seeking physicians to locate in the center of Branford. Brand new office available for practice of Ear, Nose & Throat, Dermatology, Ophthalmology, Urology, Orthopedic Surgery. Area in need of these subspecialties. Plenty of parking. Please contact: Robert Aaronson, M.D., P.O. Box 673, Branford, CT 06405.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### DERMATOLOGY

Sept. '81. Age 34. MD: Univ. of Manitoba, Faculty of Med. Int: Health Sciences Ctr. Nat'l Bds. Certified AB. Presently in practice. Will consider all types of practice except solo. Burrell H. Wolk, M.D., 4277 N. Miller Rd., Scottsdale, AR 85251.

### FAMILY PRACTICE

July '82. Age 27. MD: Case Western Reserve U. Int: No. Carolina Baptist Hospital, Bowman Gray School of Med. Res: North Carolina Baptist Hospital. Passed National Boards. Seeking group or associate practice. Write: Paul D. Harrington, 3826-L Country Club Rd., Winston-Salem, North Carolina 27104.

### INTERNAL MEDICINE

Available immediately. Age 33. MD: Baylor Coll. of Medicine. Int. & Res: Montefiore Hospital. Passed FLEX. Eligible AB. Interested in any type of practice. Contact Steven P. Baugh, M.D., 383 West Ave., Darien, CT 06820.

May '81. Age 34. MD: SUNY Upstate, Syracuse. Int: Beth Israel Med. Ctr., NYC; Residency, Norwalk Hospital, Norwalk, CT; Lic. CT. Passed National Boards. Certified American Board. Interested in solo, group, institutional or industrial practice. Write CSMS IM/WRS.

June '81. Age 61. MD: NY University. Int: Bellevue Hospital. Res: Hospital of the Rockefeller Institute. Nat'l Bds. AB Eligible. Interested in working as a physician for an insurance company. Institutional practice. Contact CSMS/IM/HFW.

July '81. Age 31. MD: SUNY Downstate. Int. & Res: Boston City Hospital. Nat'l Bds. Certified AB. Group practice. Cardiology. Has extensive training in all invasive and non-invasive procedures. David Flitter, M.D., 113 Maple Ave., Shrewsbury, MA 01545.

### NEUROLOGY

Sept. '81. MD: Med. Sch., U. of Poznan, Poland. Int. & Res: U. Hospitals, Poznan. Fellowship: Western Reserve U., Cleveland; Emory U., Atlanta, GA. Res. in Neurology and Physical Med: McGill U., Montreal. Elig. Amer. Bd. Pref. mixed type of practice, partly institutional, partly private practice in physical med. & rehab, in neurology or both, including electromyography. Write CSMS N/BEK.

Aug 1, '81. Age 31. MD: College of Phys. & Surgeons. Int: Beth Israel Hospital, NY. Res: Albert Einstein, NY. Fellowship: Neurological Institute, NY. NB and Elig. for AB. Will consider solo, group, associate or institutional practice. Experience in EMG, EEG, VER and would like to incorporate them into my practice. Write: Walter L. Nieves, M.D., 57 Elmwood Place, Short Hills, NJ 07078.

### OBSTETRICS AND GYNECOLOGY

July '81. Age 31. MD: Lady Hardinge, New Delhi, India. Int: U. of Delhi Hospital. Res: New York Infirmary Hospital (3 years). Eligible AB. Seeking solo, group or associate practice. Contact M.B. Agrawal, M.D., 318 E. 15th St., Apt. 6A, New York 10003.

'81. Age 40. MD: Catholic Medical Coll., Seoul, Korea; Int: Muhlenberg Hosp., Plainfield, N.J. Res: Montefiore Hospital & Med. Ctr., Bronx, NY; Maimonides Med. Ctr., Brooklyn, NY. Eligible AB. Interested in solo practice. Contact CSMS OB/GYN WC.

### OPHTHALMOLOGY

Available immediately. MD: McGill U., Montreal. Int: Genesee Hospital, Rochester, NY. Res: Royal Victoria Hosp., Montreal. Taking last part of NB; AB eligible. Will consider 11 openings. Write: Savian P. Nicholas, M.D., 1100 Dr. Penfield Ave., Suite 121, Montreal, Quebec H32-1A8.

### OTOLARYNGOLOGY

July '81. Age 35. MD: Munich University Med. School. Int. & Res: St. Vincent's Hospital & Med. Ctr. Nat'l Bds. Certified AB. Otolaryngology and Head & Neck Surgery. Interested in group and associate practice. Contact CSMS/OTO/HJP.

### PEDIATRICS

July '81. Age 31. FLEX. AB-Eligible. MD: Government Medical College, India. Int.: Homer G. Phillips Hospital, St. Louis, Mo. Res.: City Hospital, St. Louis, Mo.; Bridgeport Hospital, Bridgeport. Looking for full-time job in Pediatrics. Write Neena Aggarwal, M.D., 92A Robert Treat Drive, Milford, CT 06460.

Neonatology: July '81. Age 35. FLEX. AB and Nat'l bds. cert.-Ped.-elig. Neonatology. MD: India. Int.: St. Peter's Hosp. Res.: U.Conn. Fellowship: Univ. of Mississippi Med. Ctr. Grp. or instit. practice in med. community in CT. Husband neuro-surgeon looking for same area. Write V. Holla, M.D., 5840 Ridgewood Road # S-5, Jackson, MS.

Sept. '81. Age 26. AB-cert. Nat'l bds. cert. MD: Boston University School of Medicine. Int.: Boston City Hospital. Res.: Brown University-Rhode Island Hospital. Will consider group or associate practice. Contact Jon R. Jolles, M.D., 166 Raleigh Ave., Pawtucket, RI 92860.

July '81. Age 29. Nat'l bds., cert. AB-eligible. MD: Tufts Univ. Int.: Long Island Jewish Hillside Medical Ctr. Fellowship: University of Virginia-Behavioral Pediatrics. Group, associate or institutional practice. David S. Katz, M.D., 747 Madison Ave., Charlottesville, VA 22903.

July '81. Age 28. Nat'l bds. cert., AB-eligible. MD: University of Virginia. Int.: University of Connecticut Health Ctr. Res.: Univ. of Conn. Affiliated Hospital. Seeking Institutional or clinic practice. Contact Russell Stokes, M.D., Lake Hills Village, Lyman Road, Wolcott,CT 06716.

July '81. Age 29. MD: Sydney U., Sydney, Australia. Int: Jacobi-Einstein, Bronx, NY. Res: Misericordia Hosp., NY. Passed National Board. Eligible, American Boards. Interested in group, associate or institutional practice. Write: Evelyn Rosemarin, M.D., P.O. Box 553 WCMC, Valhalla, NY 10595.

### PSYCHIATRY

July '81. Age 70. MD: U. of Barcelona, Spain. Int. and Res: U. of Barcelona. Passed Nat'l Boards; Certified Amer. Bds. Seeking group, associate or institutional practice. Write CSMS PSY/FM

### RADIOLOGY

Nuclear Medicine: Available July 1, '81. Age 29. Passed Nat'l bds., eligible AM. MD: U. of Pittsburgh. Int.: Presbyterian U. Hospital, Pittsburgh. Res.: Allegheny General Hospital, Pittsburgh. Fellowship: Nuclear Medicine, Emory U. Hospital, Atlanta, GA. Experience in all aspects of Nuclear Medicine—imaging, nuclear cardiology, RIA, etc. ABNM, ABIM-eligible. Write Margaret M. LaManna, M.D., 902 Oakdale Road, N.E., Atlanta, GA 30307.

### SURGERY

July '81. Age 30. Nat'l bds., cert. SUNY-Stony Brook. Int.: UCLA Medical Center, Res.: UCLA Medical Center, General & Vascular Surgery. Desires group or associate practice. Large or medium community. Brian J. Acker, M.D., 575 S. Barrington Ave., #102, Los Angeles, CA 90049.

Sept. '81. Age 35. Nat'l bds., cert. General, Vascular and Hand Surgery. MD: Columbia College of P&S. Int. and res.: St. Luke's Hospital. Solo, group or associate practice. Warren Booth Burrows, M.D., 1142 Canterbury Sq., Indianapolis, IN 46260.

July '81. Age 36. FLEX. AB-eligible. MD: Assam Medical College, India. Int.: Misericordia Hospital, NY. Res.: St. Clare's Hospital, NY. Looking for group, associate or institutional practice. Write Bijoy B. Sarmaroy, M.D., 631 E. 235th St., New York, NY 10466.

July '81. Age 34. MD: King George's, Lucknow, India. Int: U. of Lucknow Hospitals. Res: N.Y. Univ. and NY Infirmary Hospital 1976-80. Part I of Amer. Bd. Seeking solo, group or associate practice. Contact R.M. Agrawal, M.D., 318 E. 15th St., Apt. 6A, New York 10003.

July 1, '81. MD: Seoul Nat. U. Medical School, Seoul, Korea. Int: Passaic Gen. Hosp. Res. 3 years at Englewood Hosp., NJ; Res. 1 yr. Memorial Sloan-Kettering. NY; Res. 2 yrs. at St. Mary's Hosp. Waterbury, CT. Elig. AB. Interested in solo, group or associate practice. Write: Jin-Young Lee, M.D., St. Mary's Hospital, 56 Franklin St., Waterbury, CT 06702.

July '81. Age 32. MD: Govt. Stanley Medical College, Madras, India. Int. and Res: St. Francis General Hospital, Pittsburgh, Pa. Fellowship: St. Francis General Hospital. Passed Flex, Part I, American Board of Surgery. Seeks associate, group or solo practice. Contact Nagamalli Ramakrishna, M.D., 302A Glen Douglas Drive, Glenshaw, Pa. 15116.

July '81. Age 40. MD: Haiti College of Medicine. Int: Harlem Hospital. Res: Harlem Hospital and St. John Episcopal Hospital. Fellowship in cardio-thoracic surgery, St. Francis Hospital, Long Island. Eligible for American Board. Interested in solo, associate or institutional practice. Experience in oncological surgery, traumatic surgery, hyperalimentation and vascular surgery. Write Jean Albert Midy, M.D., 99-18-222nd St., Queens Village, New York 11429.

July '81. MD: Prince of Wales Med. Coll. Patna, India. Int: Catholic Med. Ctr. of Brooklyn & Queens, NY. Res: Patna Medical College & Holy Family Hospital, Patna, India; Catholic Med. Ctr. of Brooklyn & Queens; College of Medicine of New Jersey. Fellow: Arizona Heart Institute, Phoenix, Arizona. Seeking solo or associate practice in general surgery-vascular surgery. Write: Amitava Ghosh, Apt. #135, 1645 E. Thomas Rd., Phoenix, AZ 85016.

# CLASSIFIED

WANTED: CONNECTICUT: Career Emergency Physician to join full-time group. Emergency Department cares for 32,000 patients yearly. Has paramedic program in seashore community of 53,000 people. Please send CV to Chairman, Department of Emergency Medicine, Milford Hospital, 2047 Bridgeport Avenue, Milford, CT 06460.

FOR SALE: Medical or Dental or Paramedical Professional Suite, 714 Chase Parkway Professional Building, Waterbury, Connecticut; 1224 or 1400 square feet; close proximity Waterbury and St. Mary's Hospitals, major highways. Excellent terms and financing. Call 756-4410.

MEDICAL OPHTHALMOLOGY: 43-year-old American Board Certified desires satisfactory position in established practice. Will consider all locations. Curriculum Vitae on request. Reply: ADB, c/o *Connecticut Medicine,* 160 St. Ronan St., New Haven, CT 06511

RESIDENT IN Internal Medicine for diagnosis, treatment and patient care in all areas of Internal Medicine. Requires M.D. degree, 1 year internship. 50 hours per week, $15,750.00 per year. Send resumes to Connecticut Job Service, 555 Main Street, Ansonia, CT 06401.

CALIFORNIA: ANESTHESIOLOGIST Wanted in Northern California fee-for-service practice located in Marysville. Area is within easy driving distance of Lake Tahoe, ski and recreation areas, Sacramento and the San Francisco Bay area. Great year-round climate with still reasonably priced homes. Modern, progressive, well-equipped hospital with growing medical staff. Attractive relocation incentive. Contact Judy Neal, 440 Grand Avenue, Suite 500, Oakland, CA 94610, (415) 832-6400.

FOR RENT: Medical Office, 100 Retreat Avenue, Hartford, CT, 575 square feet, close proximity Hartford Hospital. Inquire 549-1900.

---

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE.* The *JOURNAL* does not hold itself responsible for statements made by any contributor.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

Connecticut Valley Hospital in Middletown is seeking six Psychiatrists for key positions aimed at further energizing its treatment, educational and research programs, which are strongly affiliated with Yale University. Positions include Assistant Superintendent for Clinical Services, Psychiatric director for the Out Patient Clinic and four Psychiatric team leaders. The Hospital has ten accredited training programs including a four-year Psychiatric Residency training program. Interest and ability in clinical teaching is supported by a Yale faculty appointment. The program is dynamic, diversified with many areas of psychiatric interest, or subspecialization to enhance career opportunities.

The opportunity exists for limited private practice. Salary is negotiable commensurate with experience and training. Liberal benefits package includes comprehensive health insurance, retirement, life insurance, paid vacation and sick leave, paid professional conferences, deferred compensation, 12 paid holidays, personal leave, and the possibility of on-campus housing at minimal expense. Location in the area provides excellent private and public schools in a vital New England university town with abundant cultural and recreational opportunities.

License, Board certification or eligibility are required.

Send resume to: William Sledge, M.D.
Chairman, Search Committee
Dept. of Psychiatry
Yale University
34 Park Street
New Haven, CT. 06508

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

# Computerized Tomography in the Evaluation of Lumbar Disc Herniation

WILLIAM D. HARLEY, M.D., GERARD F. SAVA
AND RICHARD J. FLEMING, M.D.

**ABSTRACT—Computerized tomography of the lumbosacral spine for intervertebral disc herniation was performed in 81 patients. A CT diagnosis of disc herniation was made in 16 patients and confirmed at surgery in 9 individuals. 58 patients demonstrated either a normal disc or disc bulging on the CT scan, and these findings were confirmed by myelography or surgery in 10 individuals. CT scans of the lumbosacral spine for disc herniation are accurate, and can be used effectively in the patient with an equivocal myelogram, in the demonstration of migratory free disc fragments, and as a noninvasive screening procedure in patients with low back or sciatic pain.**

Improvements in the image resolution generated by the newer computerized tomography body scanners allow excellent visualization of the soft tissue structures within the lumbar spinal canal.[1] The contours of the intervertebral disc can be distinguished, as well as the relationship of the disc to the dural sac and the exiting nerve roots. Earlier reports, utilizing slower CT scanners with poorer resolution, suggested that computerized tomography did not give adequate soft tissue detail within the spinal canal to be diagnostically useful as a screening procedure for disc pathology.[2,3] More recent reports, utilizing CT scanners with finer resolution, have demonstrated CT to be effective in the evaluation of lumbar disc herniation.[4,5,6] Our results during a three month period were analyzed to determine the accuracy of the technique in the diagnosis of disc herniation.

## Materials and Methods

The GE 8800 CT/T body scanner became operational at The Stamford Hospital in January, 1980. We reviewed all examinations of the lumbar spine for disc herniation during the three month period of May through July, 1980. 81 cases were performed, excluding the cases in which the patient had undergone previous disc surgery.

Our technique was to obtain a lateral image of the lumbar spine within the CT scanner by utilizing the GE "Scoutview" capability. The cursor was used to select the appropriate angle and position on the lateral image, in order to scan parallel to the L3-4, L4-5, and L5-S1 disc spaces. Scans were performed in 9.6 seconds and each section was 5 mm. thick. The entire disc space was visualized by taking additional sections spaced 3mm. apart, allowing a small overlap between sections.

The CT images at each disc space level were interpreted as showing a normal disc, disc bulging, or disc herniation. A normal disc conforms to the configuration of the endplate of the adjacent vertebral body, which is usually concave at L4-5 and convex at L5-S1 (Figure 1). Disc bulging, commonly seen as a degenerative disc process, was defined as a smooth symmetrical extension of the disc beyond the margin of the body endplate (Figure 2). A herniated disc was diagnosed as a localized posterior extension of the disc, which was usually to one side but could be central (Figure 3). The CT scan was equivocal for disc herniation if a prominent disc bulge could not be definitely distinguished

---

WILLIAM D. HARLEY, M.D., Head, Section of Computerized Tomography, GERARD F. SAVA, Research Assistant; both of The Stamford Hospital. RICHARD J. FLEMING, M.D., Director of Radiology, The Stamford Hospital; Clinical Professor of Radiology, New York Medical College.

*Reprint requests to: The Stamford Hospital, Shelbourne Road & Broad Street, Stamford, CT 06902 (Dr. Harley).*

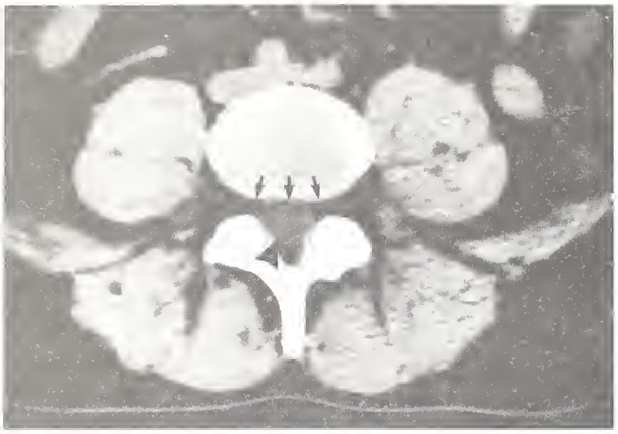


Figure 1
A normal disc at L4-L5 conforms to the configuration of the adjacent vertebral body. The posterior margin of the disc (arrows) is clearly separated from the contents of the spinal canal, including the dural sac (arrowhead).

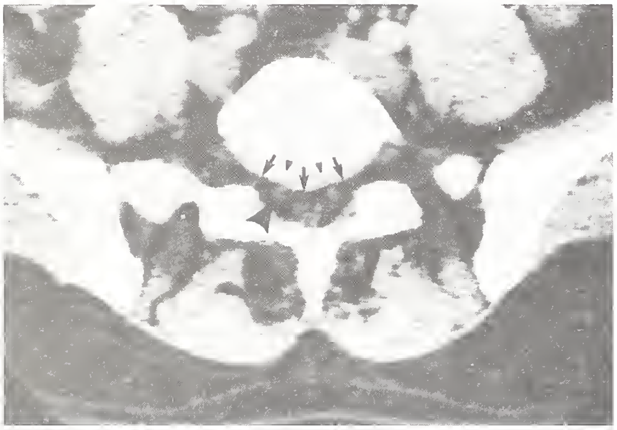


Figure 2
A bulging disc (arrows) at L5-S1 extends posteriorly in a symmetrical manner beyond the margin of the vertebral body (small arrowheads). The epidural fat (dark background) separates the bulging disc from the centrally located dural sac and the nerve roots on each side (large arrowhead).

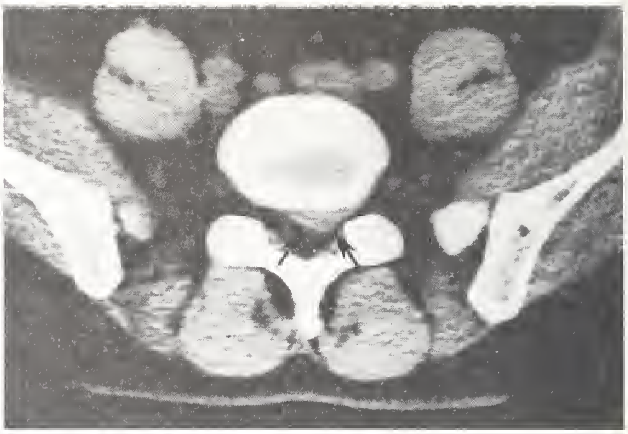


Figure 3
A herniated disc (arrows) is a localized asymmetrical posterior extension of the disc and is distinguished from the symmetrical bulging disc in Figure 2.

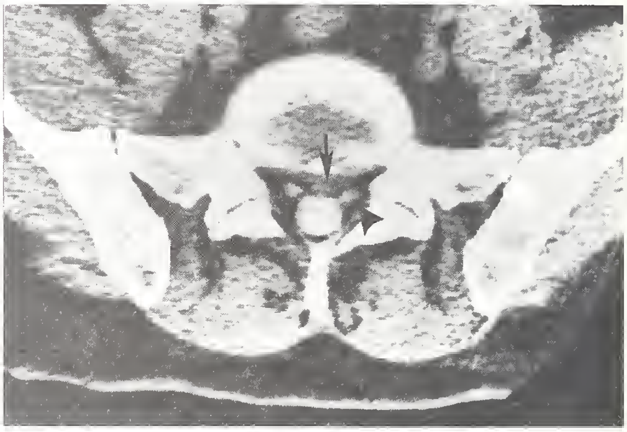


Figure 4
The subtle displacement of the nerve root (arrowhead) by the herniated disc (arrow) at L5-S1 can easily be identified on the CT section, but could not be distinguished in the myelogram. There is residual contrast in the dural sac from the previous myelogram 24 hours earlier.

from a disc herniation, or if technical factors, such as patient size or the presence of residual Pantopaque, did not allow adequate visualization of the contour of the disc.

Metrizamide myelograms were performed in 19 patients, and the results were independently interpreted as demonstrating a normal disc, disc bulging, or disc herniation. Operative reports were reviewed in the 11 patients who underwent surgery.

## Results

In 58 out of 81 patients analyzed, the CT scan demonstrated either a normal disc or disc bulging, but no disc herniation. 10 of these patients had myelograms and 2 underwent both myelography and surgery. The CT finding of no disc herniation was confirmed in each of these 10 cases.

The CT scans of 16 patients demonstrated disc herniation at one level. No patients were found to have a disc herniation at more than one level. 7 patients had no further diagnostic studies during the period of follow-up, usually because the severity of symptoms was not felt to warrant surgical intervention at that time. In 6 of 8 patients who underwent myelography, the herniated disc was confirmed. 2 myelograms demonstrated only disc bulging, but no asymmetrical displacement of the nerve root indicative of disc herniation. The CT scan was performed after myelography in these 2 cases and was able to distinguish disc herniation from the myelographic diagnosis of a bulging disc. In each case a localized posterior extension of the disc with subtle displacement of the nerve root was visualized (Figure 4).

The operative findings confirmed the CT interpretation of disc herniation in each of the 9 patients who underwent surgery. One patient had surgery for a herniated disc found on CT scan without a myelogram for confirmation. Another patient had complete filling

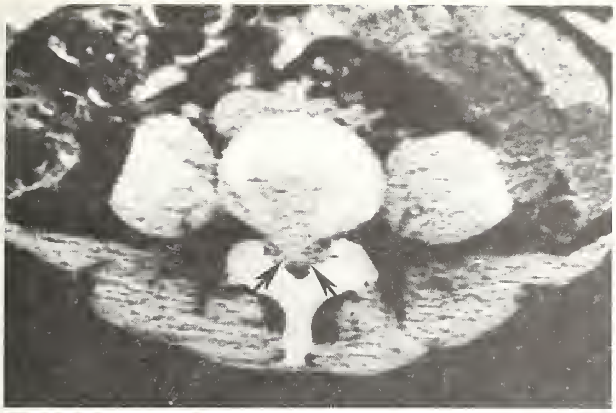


Figure 5A
The spinal canal was completely occupied by disc material (arrows) at L4-L5.

of the spinal canal by disc material on the CT scan, and a complete block at myelography (Figure 5A & 5B). Emergency surgery demonstrated a very large extruded disc.

In 8 patients the CT scan was equivocal for disc herniation. Only one of these patients underwent further diagnostic studies. The CT scan in this patient was interpreted as showing possible disc herniation, but artifacts from residual Pantopaque within the dural sac obscured detail. The myelogram demonstrated no disc herniation and no further studies were performed.

## Discussion

The reported accuracy of computerized tomography in the diagnosis of disc herniation depends on the resolution and speed of the equipment used in the study. Using a slower scanner and wider section thickness, Livingston and Grayson reported that only 68% of positive CT scans for disc herniation proved to be accurate.[2] Utilizing a similar CT scanner as our study, Williams et al reported that in the 16 patients who underwent surgery following a positive CT scan for disc herniation, the CT findings were confirmed in each case.[4]

Our results are in agreement with the reported accuracy of the most recent CT scanners in the diagnosis of lumbar disc herniation. In 9 of our cases, surgery confirmed the CT interpretation of disc herniation. In none of our cases was a disc herniation found at myelography or surgery which was not diagnosed by CT scan. In addition, none of our cases which had a negative CT scan for disc herniation were found to have a herniated disc by myelography or surgery.

Our study did have 8 out of 81 cases which were equivocal for disc herniation, and the one patient in this group who underwent myelography did not have a herniated disc. In patients who have undergone previous disc surgery it was difficult to distinguish post-surgical changes, which frequently caused obliteration of the epidural fat, from recurrent disc herniation. These cases were not included in this study.

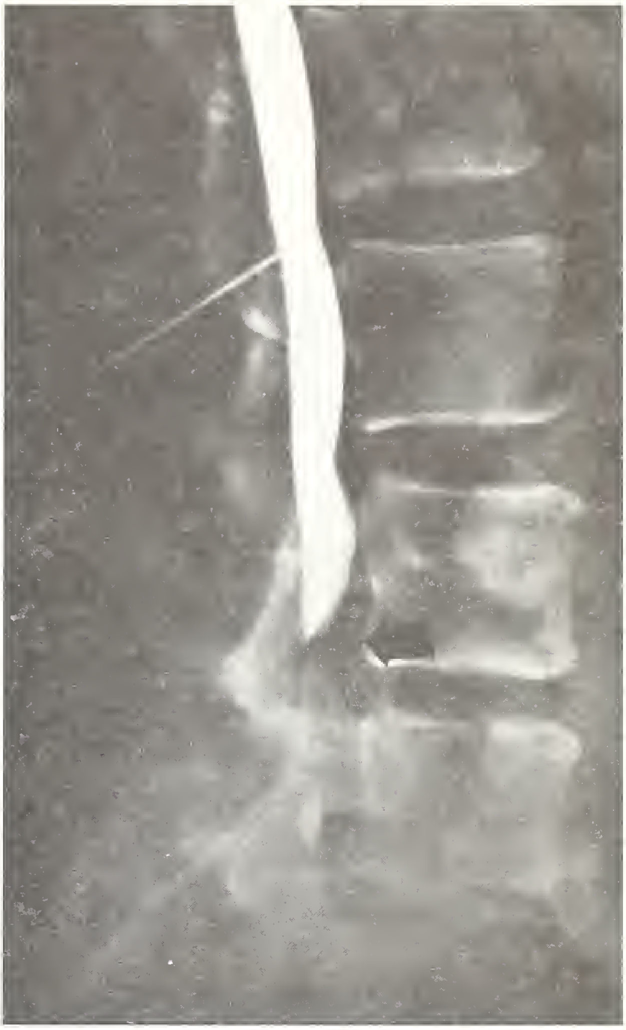


Figure 5B
The corresponding myelogram demonstrated a complete block at L4-L5 to the inferior flow of Pantopaque in the upright position (arrow). Mild disc bulging is present at the L3-L4 disc space above the block.

The large number of patients in our series with a negative CT scan for disc herniation indicates that the test was being used as a screening procedure in the initial evaluation of a patient with back pain. Most patients who had a negative CT scan required no further diagnostic studies in the evaluation of disc herniation. The accuracy of our results substantiates this approach, although only 10 of the 58 cases in this group were actually verified by myelography or surgery.

In 2 cases the CT scan was more definitive than the myelogram for diagnosing disc herniation, and the surgeon operated on the basis of the CT results. The equivocal myelogram usually occurs at the L5-S1 disc space, because the dural sac commonly lies posteriorly at this level. The separation of the dural sac from the disc means that a herniated disc can be obscured by the wide ventral epidural space. In this situation, the CT scan allows direct visualization of the herniated disc

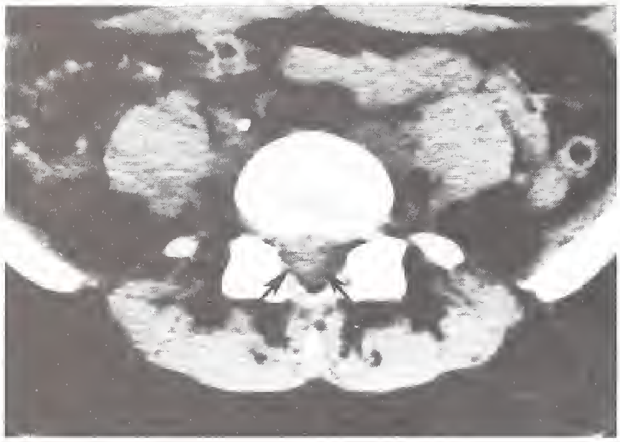


Figure 6A
A large herniated disc (arrows) is identified on the CT section through the intervertebral disc space.

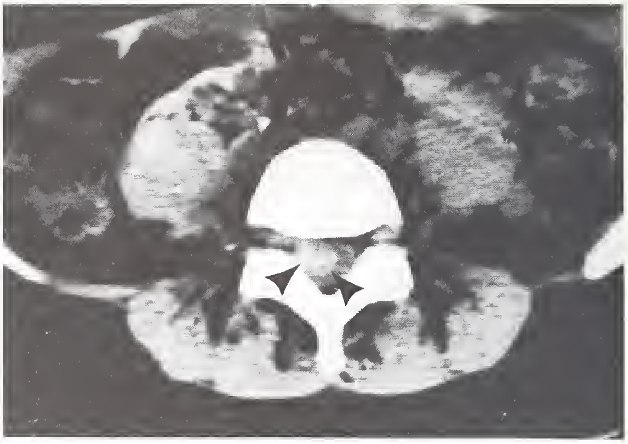


Figure 6B
A section obtained above the disc space demonstrates a free disc fragment (arrowheads) which has migrated superiorly.

within the epidural fat, prior to the disc reaching a size which would displace the dural sac or nerve root. This capability of CT scans should improve upon the sensitivity of myelography in the diagnosis of disc herniation, reported to be as low as 75% by Hudgins.[6]

The CT scan can also diagnose a disc fragment which has migrated cranially or caudally from the disc space level (Figure 6A & 6B). The localization of such a fragment may be helpful to the surgeon if the fragment is not contiguous to the major portion of the herniated disc. The retention of disc fragments has been reported to be one cause of poor initial results from lumbar disc surgery.[7]

The CT scan demonstrates excellent anatomic detail of the posterior margin of the disc. Occasionally the differentiation between a moderate central bulge or an asymmetric bulge, and a disc herniation may be difficult. The actual tear in the annulus to confirm a disc herniation is not directly visualized by CT scan. In these difficult cases cross-sectional anatomical detail achieved by CT scanning must be correlated with the clinical findings to determine the significance of the disc pathology.

## Summary

Computerized tomography of the lumbar spine may be used as a non-invasive screening procedure in the evaluation of a patient with low back or sciatic pain. The status of the lumbar intervertebral discs, as well as other contributing causes of back pain, such as degenerative changes of the facet joints or a narrow spinal canal may be diagnosed. When a myelogram is equivocal for disc herniation, the CT scan has allowed direct visualization of the contour of the disc, and has improved the accuracy in the diagnosis of disc herniation.

## REFERENCES

1. Haughton VM, Sylvertsen A, Williams AL: Soft-Tissue Anatomy Within The Spinal Canal As Seen On Computed Tomography, Radiology 134: 649-655, March 1980
2. Livingston PA, Grayson EV: Computerized Tomography In The Diagnosis Of Herniated Discs In The Lumbar Spine. In *Radiographic Evaluation of the Spine: Current Advances with Emphasis on Computed Tomography,* M.J.D. Post (Ed.), Masson Publishing, USA, Inc., New York, 1980, pp. 308-319
3. Sheldon JJ, Sersland T, Leborgne J: Computed Tomography Of The Lower Vertebral Column, Normal Anatomy And The Stenotic Canal. Radiology 124: 113-118, July 1977
4. Williams AL, Haughton VM, Sylvertsen A: Computed Tomography In The Diagnosis Of Herniated Nucleus Pulposus. Radiology 135: 95-99, April 1980
5. Meyer GA, Haughton VM, Williams AL: Diagnosis Of Herniated Lumbar Disc With Computed Tomography. NEJM 301 (21): 1166-1167, November 22, 1979
6. Glenn WV, et al: Multiplanar Display Computerized Body Tomography Application In The Lumbar Spine. Spine 4 (4): 282-352, July/August 1979
7. Hudgins WR: The Predictive Value Of Myelography In The Diagnosis Of Ruptured Discs. J. Neurosurg 32: 152-162, February 1970
8. Fager CA, Freidberg SR: Analysis Of Failures And Poor Results Of Lumbar Spine Surgery. Spine V.5, No. 1: 87-94, January/February 1980

# Delayed Serratia Empyema Post Pneumonectomy Treated with Thoracoplasty and Muscle Flap

BORIS S. ZILBERSTEIN, M.D., NOEL L. SMITH, M.D., LATEEF GIWA, M.D., ALAN R. KOORNICK, M.D., JACK S. DEITCH, M.D., BARBARA JEAN WILK, B.S. AND HARRY S. SOROFF, M.D.

**ABSTRACT—A 53-year-old male is presented with Serratia Empyema Necessitans 33 years following Pneumonectomy for gunshot wound. He was initially treated with drainage and tube thoracostomy irrigations along with antibacterial therapy. Although he became afebrile, he continued to drain purulent material growing Serratia Marcescens. No bronchial connection could be demonstrated. Thoracoplasty, debridement and intercostal muscle flap were carried out. The empyema has cleared and the patient has done well in the two years postoperatively.**

**A discussion of the possible mechanism of delayed empyema and the advantages of intercostal muscle flaps in obliterating the empyema cavity is presented.**

## Introduction

Review of the literature reveals two cases of Serratia Empyema[3,5] one of which was associated with fatality following cardiac surgery. The purpose of this paper is to present a third case of Serratia Empyema which was treated successfully with thoracoplasty and muscle flap.

## Case Presentation

This 53-year-old white male underwent left pneumonectomy in 1944 following a gunshot wound to the chest in World War II. He gives history of 1 year in the hospital postoperativley with low grade fever and fatigue before he returned to active life although further details of the hospitalization are not available. He did well afterward until he was admitted to the Northport VA Medical Center on 5/15/77 for alcohol detoxification. During that admission in the middle of June 1977 he developed fever and a tender mass in the left anterolateral chest wall. White blood cell count was 16,000 with shift to the left. Serial blood cultures revealed no growth. A diagnosis of Empyema Necessitans was established and surgery was carried out June 25, 1977. 300cc of pus was evacuated from the pleural cavity through an intercostal incision and the pleural cavity was left open to promote drainage. A heavy growth of Serratia Marcescens was obtained from the wound on initial and repeated cultures for a month despite meticulous local treatment with hydrogen peroxide and Betadine irrigations and antibacterial therapy with Gentamycin and Cleocin IV. Contrast roentgenographic study did not reveal connection between the bronchial stump and empyema cavity (Figures 1,2).

The patient's condition gradually improved and he remained afebrile although the wound drainage persisted. On July 26, 1977 the empyema cavity was widely opened through a left posterolateral approach. Ribs, remnants and regenerates were removed subperiosteally. The external wall of the empyema cavity was excised and the internal wall was debrided and irrigated with Betadine. A muscle flap was created from several intercostal muscles and was sutured to the bottom of the cavity using a 000 Tevdek suture for each one square centimeter of flap surface. The sutures were serially tied with the flap firmly approximated to the bottom of the empyema cavity during the process (Figure 3). A sump drain was left above the muscle flap and the wound was closed in layers. Two days postoperatively the drain was removed. The wound partially dehisced and developed a purulent exudation which grew out Serratia Marcescens, Pseudomonas, Proteus and Staph Aureus. The patient also developed pleuritis and pneumonia. He was treated with Gentamycin and Keflin I.V., Prednisone 30 mg po daily and IPPB. Pneumonia resolved in 5 days. The wound was closed at the end of the second month. The patient was discharged and has done well since that time (Figure 4).

---

BORIS S. ZILBERSTEIN, M.D. Chief Resident, State Univ. of New York (SUNY) Stony Brook, New York

NOEL L. SMITH, M.D., Actg. Assoc. Chief of Surgery, Veterans Administration Medical Center (VAMC), Northport & Asst. Professor of Surgery, SUNY at Stony Brook

LATEEF GIWA, M.D., Consultant, VAMC, Northport and Assistant Professor of Surgery, SUNY, Stony Brook

ALAN R. KOORNICK, M.D., Coordinator Residency Program & Asst. Professor of Surgery, SUNY, Stony Brook, and Consultant —VAMC Northport

JACK S. DEITCH, M.D., Assistant Professor of Radiology, SUNY, Stony Brook

BARBARA JEAN WILK, B.S., Technical Specialist, SUNY, Stony Brook

HARRY S. SOROFF, M.D., Chief of Surgery—VAMC Northport and Professor & Chairman, SUNY, Stony Brook

*Reprint requests to: Surgical Service, Veterans Administration Medical Center, Northport, NY 11768 (Dr. Zilberstein).*

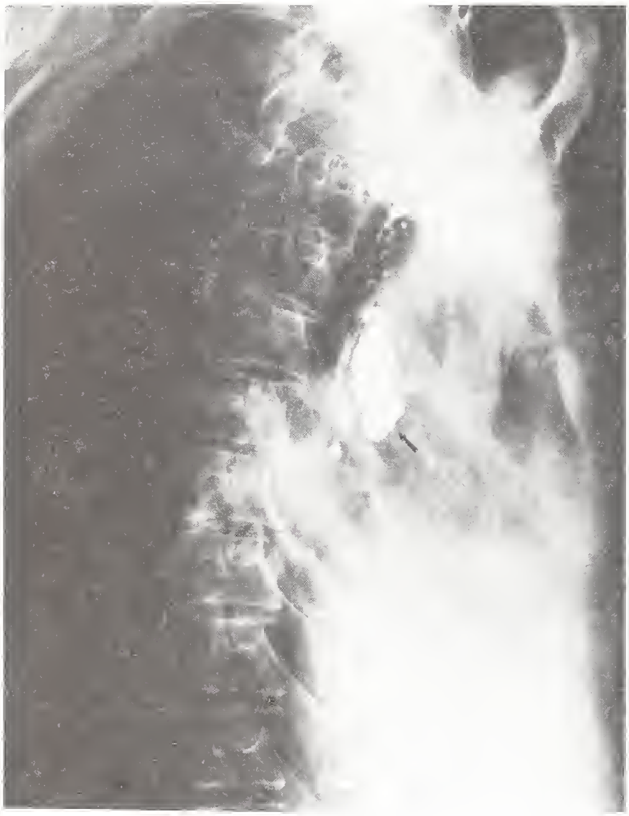


Figure 1

Oblique left bronchogram: Contrast filled left mainstem bronchial stump (arrow) without communication to pleura or empyema cavity. Swallowed contrast in esophagus.

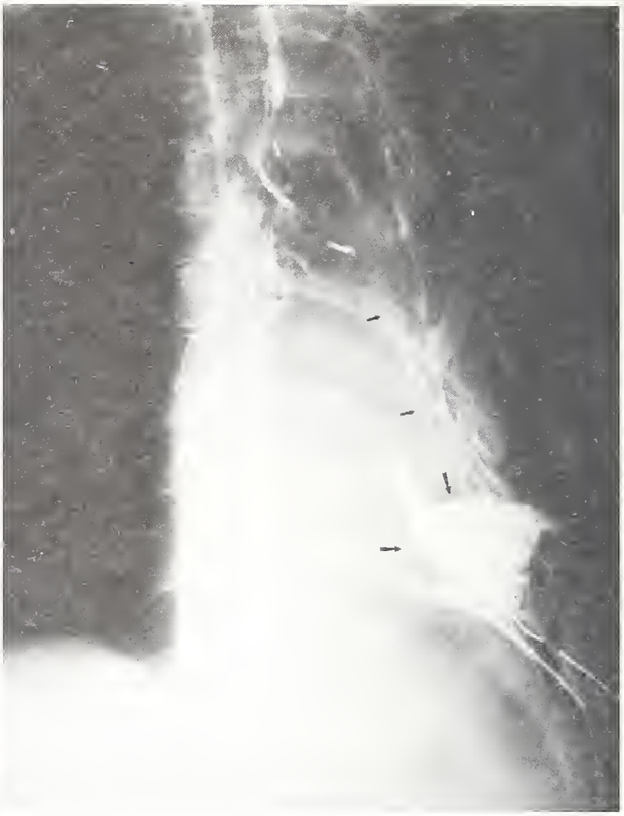


Figure 2

Contrast injected through drainage tube fills empyema cavity (large arrows). Deformed left hemithorax and extensive pleural calcification (small arrows). Residual contrast in left main bronchus and esophagus. Pulmonary herniation is apparent in the left upper thorax.

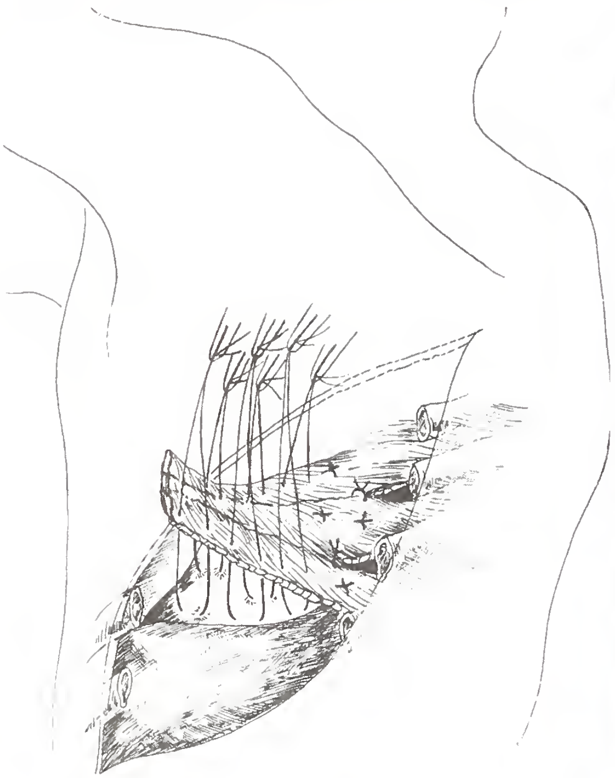


Figure 3

Schematic drawing of muscle flap grafting.

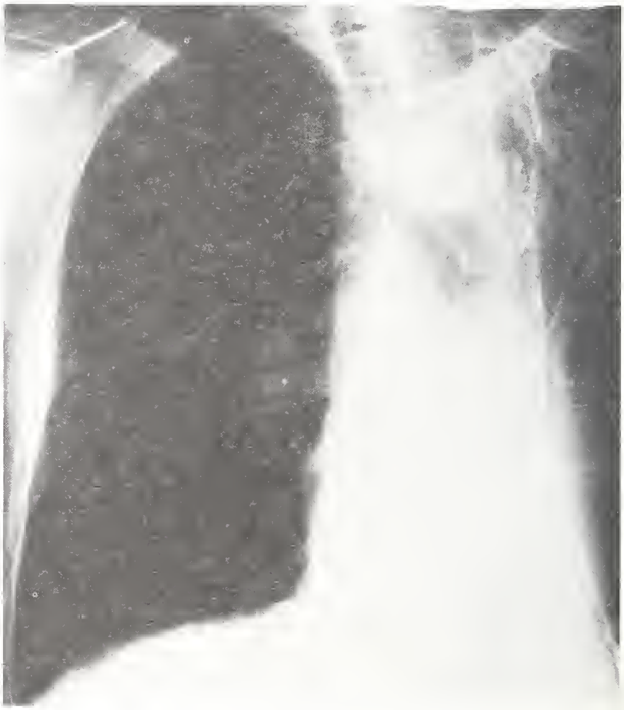


Figure 4

Chest X-ray two years following thoracoplasty with muscle flap grafting.

## Discussion

Of great interest in this case is the late and aggressive appearance of empyema 33 years after pneumonectomy. This is probably the latest reported onset of empyema post pneumonectomy. A case reported by Stafford and Clagett described empyema which occurred 26 years after pneumonectomy.[4] Delayed onset of empyema was seen at times following lung resection for tuberculosis but is very unusual following non tuberculous bacterial empyema.[1]

We believe that late empyema could follow inadequately treated postoperative acute empyema. In the present case the long period of recuperation following pneumonectomy and the calcium incrustation of the pleura indicates chronic infection which prevented the pleural space from obliterating.

Weakness, fatigue, low grade fever and elevated WBC are signs of chronic empyema. Intoxication with alcohol could have masked the symptoms in this patient until acute unmistakable Empyema Necessitans occurred with bulging of the chest wall.

We doubt that Serratia Marcescens, which is very rare in pleural empyemas, remained unnoticed for so many years. We favor the idea of hematogenous spread of Serratia Marcescens into the pleural cavity with remaining exudate. This pleural fluid is excellent culture media placed in the ideal natural thermostat of the human body. It is theoretically possible, though highly doubtful, that delayed expulsion of infection around suture material was related to the development of empyema. The source for hematogenous spread of Serratia is speculative since there was no established site such as a urinary tract infection. Possibilities include gingiva and intravenous puncture sites.

One characteristic of Serratia Marcescens is the strong resistance to most antibiotics.[6] The infection persisted despite months of therapy including Gentamycin, Carbenicillin and Betadine-Peroxide irrigations through the thoracostomy. The conservative approach of Clagett and Geraci[2] could not be employed in the presence of this chronic infection. Open drainage was not successful. Rib resection did improve drainage but not obliterate the cavity. Thoracoplasty alone blindly reduces the pleural space leaving pockets with bacteria resistant to antibiotic administration. Therefore it was elected to use thoracoplasty with muscle flap to obliterate the cavity. This procedure has been successful in our experience[7,8] even in infected wounds. We think that most of the failures with this technique have been encountered in patients with bronchopleural fistula and continued contamination. In cases of empyema with bronchopleural fistula usually we try to close the fistula transpericardially or from a contralateral approach followed by thoracoplasty with muscle flap grafting as a second stage of surgical treatment. The case presented here demonstrates that a properly applied thoracoplasty with muscle flap is highly beneficial in the treatment of chronic empyema in the absence of bronchopleural fistula.

## REFERENCES

1. Andrews Neil C: The surgical treatment of Chronic Empyema. Diseases of the Chest. Vol 47, 533-538, 1965
2. Clagett OT, Geraci JE: A procedure for the management of postpneumonectomy empyema. J Thorac Cardiovasc Surg 45:141, 1963
3. Papanagiotou J, Aligizakis C: Isolation of Chromobacterium prodigiosum from empyema. J Clin Pathol 12:170-171, 1959
4. Stafford EG, Clagett OT: Postpneumonectomy empyema. J Thorac Cardiovasc Surg 63:77, 1972
5. Wilfert CM, Gutman LT: Pharmacokinetics of trimethoporium-sulfamethoxazole in children. Can Med Assn J 112:73-76, 1975
6. Yu Victor L: Serratia Marcescens. The New Engl J of Med, Vol 300, 887-893, 1979
7. Zilberstein BS: Prophylaxis of bronchial fistulae by strengthening bronchial closures with mechanical suturing during operations for pulmonary tuberculosis. Summary of Ph.D. Thesis, Moscow, 1971
8. Zilberstein BS: Problems of reoperation in lung surgery. Abstracts of Reports of VI Scientific-Applied Conference of Phthisiologists of Moscow. Moscow 1973, 30-31

# Disease Illness: An Approach to the Patient

ROBERT PASKY, III, M. ED

**ABSTRACT—There is the need for the physician to examine patient problems from both the biomedical model and the psychosocial perspective. The theme which follows focuses on clarifying the distinction between disease and illness, as reflected in this dual perspective, as well as the interrelationships impacting the patient-physician interaction.**

It has been stated that disease and illness are not the same but separate entities unto themselves.[1] Disease is regarded as "malfunctioning or maladaption of biologic and/or psychophysiologic processes in an individual; whereas illness represents personal, interpersonal and cultural reactions to disease or discomfort."[2] Analysis of this definition reveals that though disease and illness are not the same, they may exist simultaneously, and either may be responsible for the presence of the other. It seems then that physicians should attempt to deal with not only disease, but illness also.

The family physician can be viewed as an interfacing link between biomedical science and the patient. The task of this interface is to introduce the patient to medicine, and medicine to the patient. Implicit in the patient-physician bond is this process of introduction or education. The physician knows about disease, but only the patient knows about illness. The contract then should involve a certain degree of reciprocal education enabling the physician to become a "therapeutic ally" for the patient, a family resource who knows the family in the truest sense. In short, the family physician has the opportunity to diagnose and treat disease and illness.

At this juncture, the theoretical merits of this type of medicine seem legitimate, but how do these concepts translate into patient care, and is it worth the bother? It has been reported that in greater than 50% of all visits to physicians, no physical evidence of disease is uncovered.[3] To dismiss these people denies the fact that many psycho-social ills become manifest as pathology.

What tools are available to the physician enabling him to ferret out the patient's concept of illness and of what use is it in treating illness? First, the physician must make an effort to elicit the patient's "model" of illness. There have been suggested several questions that may be asked during routine office histories in order to obtain the patient's model of illness. These are:

1) What do you think has caused your problem, and when did it begin?
2) What do you think your sickness does to you, and how does it work?
3) How severe is your sickness, and do you think it will have a short or long course?
4) What kind of treatment do you think you should receive?[4]

The last three questions describe the psychosocial meaning of the disease to the patient.

5) What are the most important results that you expect from this treatment?
6) What are the chief problems your sickness has caused for you?
7) What do you fear the most about your sickness?[5]

With this information, the physician is able to *compare* his own model with that of the patient. This presents an excellent opportunity to introduce relevant patient education issues based on the discrepancies between the patient's model and the physician's, while at the same time respecting the beliefs of the patient, thus enabling the patient and physician the opportunity to negotiate a shared model. During this process, it is hoped that the patient will develop a vested interest in the plan of treatment and management. This kind of negotiation is especially important when the physician and patient are of different cultural and/or socioeconomic background.[6-9]

Finally, what of the patients that leave the doctor's

---

ROBERT PASKY, III, M. ED., formerly Instructor, Director of Curriculum and Evaluation, Department of Family Medicine, The University of Connecticut Health Center; presently Assistant to the Director of Family Practice Program and Staff Associate, Rockford School of Medicine, University of Illinois College of Medicine.

office without a diagnosis of physical disease and patients with psychophysiologic pathology? When it is concluded that the patient is presenting symptoms with no physical basis, or, if there is a physical basis (e.g., metrorrhagia) in the absence of pathology, there are three available choices:

1) treat the symptom, or
2) don't treat at all, or
3) pursue the basic cause of the problem

The first alternative is the most popular, and may involve treatment with Valium to 'calm' the nerves, or birth control pills to re-regulate the menstrual cycle, or both in the case of functional bleeding. The second alternative might involve the admonishment "There's nothing physically wrong with you." The third alternative (which may be the least popular approach) could link the treatment of illness and disease. Why then are (1) and (2) so frequently used and the third alternative avoided? Probably because of what Fox calls lack of training for uncertainty.[10] He proposes that medical students lack a formal training in accepting uncertainty and this uneasiness with uncertainty is heightened when there is an increased exposure to the uncertainties of psycho-social medicine.

The main source of uncertainty is perhaps a lack of training regarding an approach to psycho-social issues and their resolution. At least three questions need to be asked to begin to come to terms with the psycho-social life of the patient:

1) How do I know or suspect that the patient has underlying psycho-social illness problems?
2) How do I locate them?
3) What do I do once I find them?

Question (1) involves the search for somatic symptoms. One may look at the health questionnaire. Patients under stress will tend to answer yes to questions concerning the presence of loneliness, decreased sleep, headache, nervousness, and indigestion.[11] Once psycho-social illness is suspect, the second quesiton becomes pertinent. It was partially handled with the patient-physician model concept, but this model is best suited to provide information from a patient who is already suffering from a disease that has psycho-social problems secondary to that disease. The basis of question (2) in this case deals with the fact that although the patient may be the only person who has access to information concerning the core of this illness behavior, he may not necessarily be sure where the problem lies. The physician therefore must act as facilitator in this situation. Just as one helps patients describe pain more definitively, so one may help them describe their distress.

Question (3) is perhaps the most disconcerting of all. While some patients' problems in this realm are more complex than others, a large portion of patients with these problems can benefit from assistance utilizing a tool taught to most medical students—patient acceptance. Studies in brief psychotherapy indicate the major parametric change in successful therapy is an index of self-acceptance.[12] The physician can help the patient first to accept the fact that it is legitimate to be ill because of psycho-social stress. If the actual source of stress in uncovered, one can acknowledge that the patient's stress response is legitimate for the particular situation. Much of the formal work of psychotherapists is to facilitate the sharing by the patient of distressing psycho-social problems with the therapist. Once the patient is able to verbalize these problems, the major tool used by the psychotherapist is acceptance of these previously considered unacceptable thoughts and behaviors.

Some patients are not receptive to the suggestion that they have psycho-social problems as the basis of illness, and may not be amenable to corrective therapy. The model presented is not intended to encompass all patient deviance, but it does attempt to define the physician's role more broadly.

Just as the patient needs the physician's "permission to be ill," the physician needs to give himself permission to say that it bothers him that because certain patients do not fit the biomedical disease "mold," they produce an uncomfortable feeling. The physician needs to confront not only disease, but illness, and once aware of illness, there is the responsibility to either attempt to aid the patient in dealing with it, or to refer the patient elsewhere to someone who feels comfortable with that which holds a great deal of uncertainty.

## REFERENCES

1. Kleinman, Eisenberg L: Culture, illness, and care: clinical lessons from anthropolgy and cross cultural research. Ann Int Med 88: 251, 1978
2. Ibid
3. Zola IK: Culture and symptoms: an analysis of patients presenting complaints. Am Sociol Rev 31: 615, 1966
4. Kleinman A, Eisenberg L: Culture, illness, and care: clinical lessons from anthropology and cross cultural research. Ann Int Med 88: 251, 1978
5. Ibid
6. Ibid
7. Harwood A: The hot-cold theory of disease: implications for treatment of Puerto Rican patients. JAMA 216 (7) May 1971
8. Snow SF: Folk medical beliefs and implications for care of patients. Ann Int Med 81: 82, 1954
9. Pilowsky I: Ethnicity and illness behavior. Psych Med 7: 447, 1977
10. Fox RC: Report of comprehensive care and teaching to commonwealth. Cornell Press, 1954
11. Mechanic D: Social psychological factors affecting the presenting of bodily complaints. N Eng J Med 286: 1132, 1972
12. Sherry P: Curative factors in group psychotherapy and growth groups. J Clin Psych 32 (4), 835, Oct. 1976

# Long Term Monitoring of Seizure Patients

GREGORY L. HOLMES, M.D., MARK McKEEVER
AND BARRY S. RUSSMAN, M.D.

**ABSTRACT—Proper management of the patient with intractable seizures requires accurate diagnosis of seizure type. Over the past decade, increasing sophistication in the use of prolonged electroencephalographic and video monitoring of patients with seizures has made this a useful diagnostic test. This paper reviews the history of EEG monitoring and describes how the technique presently is employed. Patients with seizures that are difficult to classify by clinical history or routine EEG are frequently helped by this technique. Seizure frequency estimations are improved in patients with subtle seizures. The technique is also of value in distinguishing nonepileptic activity from epileptic seizures. Although not all patients with seizures need or benefit from telemetry, the technique is a welcomed addition in the armamentarium used against epilepsy.**

The diagnosis and treatment of patients with uncontrolled seizures depends heavily on accurate clinical and laboratory evaluation.[1] Classification of the seizure type is extremely important in determining the diagnostic studies to be performed as well as the drug treatment. Unfortunately, the data available to the clinician is often inadequate for making the proper diagnosis. Some seizures, such as absence seizures, can be so subtle that they can be easily missed by parents or other observers, while other seizures, such as generalized tonic-clonic seizures, are so disconcerting that important characteristics, such as focality of onset, are missed. In addition, partial seizures with complex symptomatology (psychomotor or temporal lobe seizures), may be difficult to differentiate from behavioral or psychiatric disease. Along with clinical descriptions, the clinician often uses electroencephalographic data in reaching a diagnosis. However, the EEG may be normal interictally in many seizure types, especially absence and partial seizures with complex symptomatology. In addition, epileptiform activity in the interictal EEG is not necessarily pathognomonic of epilepsy. In a study by Cavazutti et al.,[2] for example, epileptiform patterns were found in 3.54% of the awake EEG tracings of normal children.

One of the newer methods used in improving diagnostic accuracy is the simultaneous recording of a time linked video recording of the patient along with the EEG. The remainder of this paper will deal with this technique.

Schwab et al.[3] in 1954 were among the first authors to note the value of recording the EEG simultaneously with motion pictures of the clinical seizure. In 1966 Goldensohn[4] refined the method by using a split screen technique in which one-half the screen was focused on the patient while the other half was used for the EEG. Current techniques utilize a video display of the patient time linked with an FM radio telemetry signal recorded on video tape (TEEG-VR).[5] The current method in use at Newington Children's Hospital involves the use of FM radio telemetry of eight channels of EEG displayed on a split screen with both a close-up of the patient's face and a full-length of the patient's body (Figure 1). Both the EEG signal and video of the patient are time linked and recorded on video tape. The tape can then be reviewed frequently. The EEG is transmitted by an FM radio signal from a lightweight portable head transmitter. The use of radio telemetry allows the patient freedom to move around the hospital

---

GREGORY L. HOLMES, M.D., Assistant Professor, Pediatrics and Neurology, Newington Children's Hospital and University of Connecticut Health Center. MARK McKEEVER, Electroencephalography Technician, Newington Children's Hospital. BARRY S. RUSSMAN, M.D., Associate Professor, Pediatrics and Neurology, Newington Children's Hospital and University of Connecticut Health Center.

*Reprint requests to: Newington Children's Hospital, 181 East Cedar St., Newington, CT 06111 (Dr. Holmes).*

ward since he/she is not connected to an electroencephalograph. The only requirement is that the patient stay within the range of the television cameras. By using a mobile camera, the patient can be recorded in the classroom or playroom (Figure 2). Video taping both the patient and the EEG makes repeated review possible and improves the correlation between clinical and EEG abnormalities.

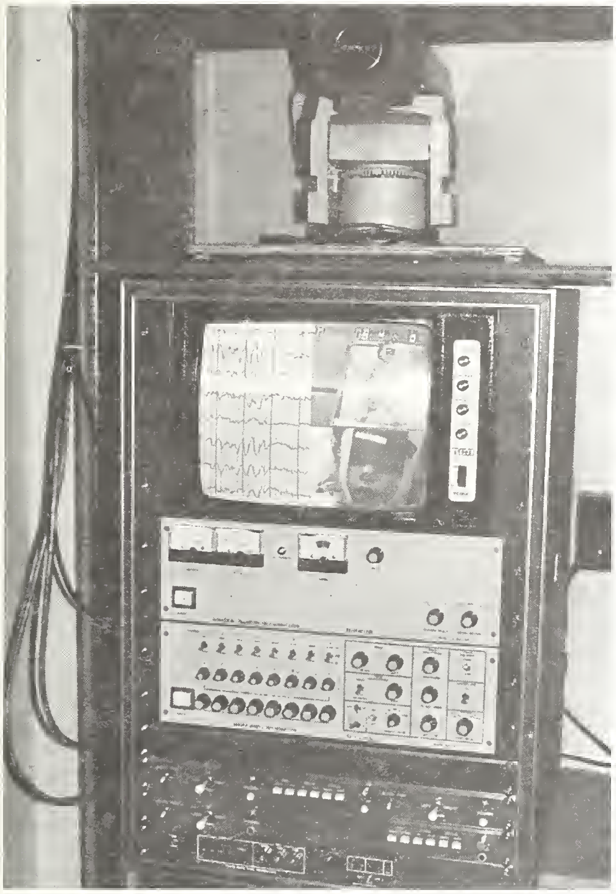


Figure 1
TEEG-VR screen showing patient and electroencephalogram

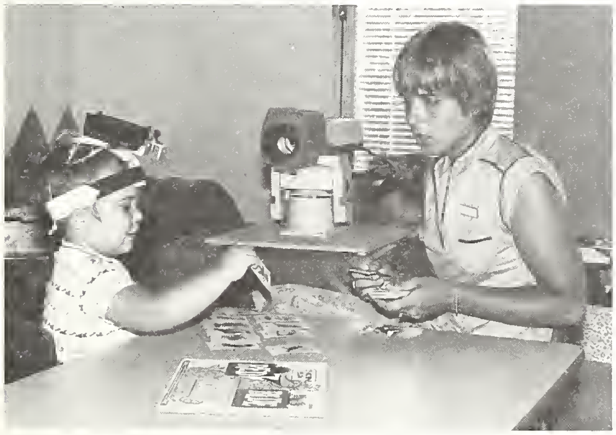


Figure 2
Portable camera recording patient at play

Other methods used in prolonged monitoring includes the use of a cassette analog recording system that allows 24 hour EEG recordings as outpatients.[6] Although this allows monitoring in a natural setting, there is no video recording of the patient or on-line monitoring. The technique is of most value in measuring frequency of absence seizures.

The combined use of EEG telemetry and video taping is a powerful diagnostic tool. The routine electroencephalographic recording of 20-60 minutes is often an inadequate sample from which to generalize about a patient's seizure disorder.[7] Even multiple recordings may fail to pick up intermittent abnormalities, such as the actual ictal event.[5] Furthermore, as noted by Porter et al.,[5] the EEG laboratory may not be the optimal environment in which to induce seizures. By performing prolonged EEG recordings, the chances of recording an ictal event or interictal abnormality increases substantially. For example, Delgado-Escueta,[8] who used prolonged monitoring in evaluating 64 patients with psychomotor seizures, was able to record interictal paroxysms from all 64 patients.

Certain diagnostic problems are especially benefited by TEEG-VR. For example, it may be very difficult to distinguish complex absence seizures (atypical petit mal) from partial seizures with complex symptomatology (psychomotor or temporal lobe seizures). Correct classification aids in treatment. Absence seizures respond to drugs, such as valproic acid or ethosuximide, while partial seizures with complex symptomatology often are better treated with phenytoin, carbamazepine or barbiturates. In patients with subtle seizures, such as absence seizures, telemetry is helpful in estimating seizure frequency. Accurate seizure frequency assessments are very important in determining whether drug therapy is beneficial.

By allowing the patient freedom from the EEG laboratory, external stresses can be evaluated. Guey and co-workers[9] investigated the relationship between various psychological tests and simultaneous telemetered EEG findings in 30 patients with absence seizures, and noted that seizures diminish when epileptic patients are concentrating. Seizures were triggered more frequently by inactivity, moments of rest after performance of a task, and during unpleasant tasks. Emotionally charged material discussed during interviews was found to lead to seizures. Geier,[10] in a similar type study in adolescent and adult epileptic patients, showed that in both groups, unstructured situations characterized by freedom and lack of distraction, had a facilitatory effect on epileptogenic paroxysms, and situations in which the patients' interests were engaged, had an inhibitory effect. Friis and Lund[11] and Sato et al.[6] also demonstrated that emotional stress frequently triggers clinical seizures. TEEG-VR facilitates evaluation of these stresses.

The use of the technique is now widespread.[5] Penry et al.[12] used TEEG-VR in evaluating absence seizures in 48 patients varying from 4-24 years of age. They found that simple staring attacks were a rare form of absence seizures while automatisms and clonic movements were very common in absence seizures. Escueta et al.[13] used TEEG-VR in the analysis of 76 psychomotor attacks in 14 epileptics and demonstrated two electro-clinical types of psychomotor attacks. Penry et al.[14] and Brown et al.[15] found that TEEG-VR was a much more reliable means of determining seizure frequency than patient history or even intensive observation by physicians or trained observers. The method has also been used extensively in the pharmacologic evaluation of absence seizures.[16,17]

Desai et al.[18] and Holmes et al.[19] have used TEEG-VR in the evaluation of patients with pseudoseizures. Pseudoseizures, defined as clinical events which superficially resemble epileptic attacks but which are not associated with any ictal or postictal changes on the EEG, were found in 11 of 42 pediatric patients with intractable seizures admitted to a chronic epilepsy center.[19] Many of these patients were being treated with potentially toxic medications for presumed epileptic seizures. In addition to pseudoseizures, TEEG-VR is also helpful in differentiating epileptic seizures from nonepileptic activity. Differentiating absence seizures from daydreaming, syncopal attacks from atonic seizures with complex symptomatology is facilitated by TEEG-VR.

Sutula et al.[20] reviewed their experience using prolonged TEEG-VR in the evaluation and treatment of patients with intractable seizures. Forty patients admitted to a comprehensive epilepsy program were evaluated with at least one session of prolonged TEEG-VR. Using telemetry, previously unrecognized seizure types were identified in 8 patients (20%). Telemetry resulted in a change in classification in 15 patients (37.5%). Seizure frequency as determined by telemetry differed significantly from clinical observation alone in 10 patients (25%). Overall telemetry was felt to be valuable in evaluating therapy in 80% of the patients.

In another study, Boenigk et al.[21] compared prolonged EEG recordings with clinically classified seizure type, frequency, and findings on routine EEG recordings. Like Sutula et al.,[20] the authors noted a large number of seizures that went undetected clinically. Like Porter et al.,[5] the authors found frequent EEG abnormalities on prolonged EEG recordings that were not detectable using routine EEG recordings. The authors concluded that the use of prolonged EEG recordings and video monitoring for diagnostic purposes and evaluation of treatment was very valuable and justified the expense.

## Newington Children's Hospital Experience

Twenty-five patients have been evaluated with prolonged TEEG-VR thus far at Newington Children's Hospital. Each patient has had one or more sessions of TEEG-VR with the average length of recording 5 hours. Age of the patients has varied from 4 months to 18 years. Table 1 lists the reasons for requesting telemetry. In a significant number of patients there was more than one reason for requesting telemetry. Table 2 lists the results.

We have found TEEG-VR to be very valuable in estimating seizure frequency, primarily of absence seizures, and differentiating epileptic seizures in children from nonepileptic activity such as eye blinking, staring, and stereotyped self-stimulatory behavior. As a direct result of telemetry, over half of the patients had medication adjustments.

Patients who we feel may benefit from TEEG-VR are listed in Table 3.

TEEG-VR is also of value in teaching medical and paramedical personnel about epilepsy. Certain patients and/or their parents benefit from reviewing the tapes along with an explanation by the physician. Nonseizure activity, as well as actual seizures, can be used to enable the parents to be better observers. Using the tapes as a teaching device also improves skill in classifying seizures by medical personnel.

In order to demonstrate the use of TEEG-VR, two brief case reports are presented:

### Case #1

T.M. was an institutionalized 16-year-old female with mild mental retardation and generalized tonic-clonic seizures. She had been maintained on phenobarbital and phenytoin for several years. On the day prior to admission, the patient was placed in a foster home. On the day of admission, the patient began having what appeared to be generalized tonic-clonic seizures with eyes deviated upward and jerking movements of both arms and legs in a rhythmic manner. Intravenous valium, phenobarbital and Dilantin were not successful in fully stopping the seizures, although the frequency decreased. An electroencephalogram between seizures was diffusely slow, but showed no epileptogenic activity. Because of the suspicion that some of these seizures might be pseudoseizures, the patient was transferred to Newington Children's Hospital for TEEG-VR. The patient underwent 6 hours of recording during which time she had 2 periods of tonic-clonic movements of the legs and arms without any EEG changes prior to, during, or after the "seizure." The diagnosis of pseudoseizures was made and behavioral modification was started. The pseudoseizures were essentially ignored and "good" behavior was rewarded. The patient was discharged 10 days after admission with no further pseudoseizures.

### Comment

In this case, TEEG-VR was very helpful in making the diagnosis of pseudoseizures. The routine EEG, although abnormal, was of little value in this particular case.

### Case #2

D.D. was a 2-1/2 year old male infant with Down's syndrome who developed infantile spasms at age 2 months. Treatment with phenobarbital, Dilantin, Depakene and Tegretol was only partially effective in controlling the seizures. Developmentally, the child remained severely delayed. At age 2-1/2 years, he could not stand, walk or talk. The child had numerous seizures consisting of head drops, eye blinking and occasional myoclonic jerks. The patient was admitted to Newington Children's Hospital for evaluation prior to initiation of clonazepam treatment. On admission, the patient was lethargic with very little spontaneous activity. No seizure activity was noted. Six hours of TEEG-VR was performed in order to assess seizure frequency. During the 6 hours, the patient was in slow spike-wave status for 80% of the recording time. During the seizure activity, the patient laid quietly with few movements and did not respond to his mother. When not seizing the infant was much more alert, looked around and was responsive. After reviewing the tape the mother was able to predict when the child was and was not seizing. The child was started on clonazepam. Three weeks later the child was readmitted for TEEG-VR. During this admission, the child was much more alert, active and responsive. During 4 hours of TEEG-VR no seizures were seen.

Table 1
REASONS FOR REQUESTING TELEMETRY AT NEWINGTON CHILDREN'S HOSPITAL

| | | |
|---|---|---|
| Estimation of seizure frequency | 19/25 | (76%) |
| Clinical suspicion of seizures in patients with normal electroencephalograms | 6/25 | (24%) |
| Differentiation of seizures from non-seizure activity | 6/25 | (24%) |
| Classification of seizures | 3/25 | (12%) |
| Question of pseudoseizures | 2/25 | ( 8%) |

Table 2
RESULTS OF TELEMETRY

| | | |
|---|---|---|
| Medications changed as result of TEEG-VR | 13/25 | (52%) |
| Seizure frequency significantly different from clinically estimated frequency | 11/25 | (44%) |
| Seizure type confirmed | 10/25 | (40%) |
| Activity thought to be epileptic seizures showed not to be epileptic siezures | 4/25 | (16%) |
| Stereotyped, self-stimulation behavior confirmed not to be epileptic seizures | 3/25 | (12%) |
| Activity thought not to be epileptic seizures showed to be epileptic seizures | 2/25 | ( 8%) |
| Seizure type changed | 1/25 | ( 4%) |

Table 3
PATIENTS WHO MAY BENEFIT FROM TELEMETRY

1. Patients that have symptomatology consistent with epilepsy but not diagnostic of such, i.e., the patient with possible partial seizures with complex symptomatology in whom the hard wire EEG is normal or equivocal. TEEG-VR will increase the chances of "capturing" and ictal or interictal event. The ictal event may be epileptic or nonepileptic.
2. Patients with seizures that are difficult to categorize by either EEG or clinical symptomatology.
3. Patients in which an accurate frequency count is necessary, i.e., absence seizure frequency.
4. Patients with suspected pseudoseizures.
5. Patients in whom the effect of external stresses on seizure frequency are to be evaluated.
6. Infants with near-miss sudden infant death syndrome (SIDS).
7. Patients with sleep abnormalities.

## Comment

This child had prolonged periods of spike-wave status that were not obvious clinically. TEEG-VR was very helpful in differentiating epileptic and nonepileptic activity. Prior to admission the mother was grossly underestimating the extent of his seizures.

The cost of telemetry at Newington Children's Hospital is $275 for the first two hours and then $75 an hour thereafter. The initial capital outlay for the equipment is approximately $35,000. The cost of a routine (hard copy) electroencephalogram is $120. Although we have not studied enough patients to analyze the cost/benefit ratio, our early impressions agree with those of Sutula et al.[20] and Boenigk et al.[21] that TEEG-VR's benefits override the additional cost.

Although not all patients require or benefit from TEEG-VR, the technique is a welcomed tool in the evaluation and treatment of epilepsy. The advantages of telemetry are listed in Table 4. In patients with seizures difficult to classify, seizures related to stress, subtle seizures, or suspected pseudoseizures, evaluation often will be improved with TEEG-VR.

Table 4
ADVANTAGES OF TEEG-VR

1. Prolonged recording is feasible.
2. Allows correlation of electroencephalogram with clinical events.
3. The time linked electroencephalogram and video display of the patient can be reviewed as often as necessary.
4. Seizure frequency can be accurately accessed.
5. External stresses can be evaluated.
6. Epileptic activity can be differentiated from nonepileptic activity.
7. Tapes can be used for patient, medical, and paramedical education.

## REFERENCES

1. Porter RJ, Penry JK and Lacy JR: Diagnostic and therapeutic reevaluation of patients with intractable epilepsy. Neurology 27:1006-1011, 1977
2. Cavazutti GB, Cappella L, Nalin A: Longitudinal study of epileptiform EEG patterns in normal children. Epilepsia 21:43-55, 1980
3. Schwab RS, Schwab MW, Withee D et al: Synchronized moving pictures of patients and EEG. Electroencephalogram Clin Neurophysiol 6:684-686, 1954
4. Goldensohn ES: Simultaneous recording of EEG and clinical seizures using the kinescope. Electroencephalogr Clin Neurophysiol 21:623, 1966
5. Porter RJ, Penry JK, Wolf AA: Simultaneous documentation of clinical and electroencephalographic manifestations of epileptic seizures. In Kellaway, P., Petersen, I., (Eds.) Quantitative analytic studies in epilepsy, New York, Raven Press, 1976 pp. 253-268
6. Sato S, Penry JK and Dreifuss, FE: Electroencephalographic monitoring of generalized spike wave paroxysms in the hospital and at home. In Kellaway, P., Petersen, I., (Eds.) Quantitative analytic studies in epilepsy, New York, Raven Press, 1976 pp. 237-251
7. Stalberg E: Experiences with long-term telemetry in routine diagnostic work. In Kellaway, P., Petersen, I., Quantitative analytic studies in epilepsy, New York, Raven Press, 1976 pp. 269-278
8. Delgado-Escueta AV: Epileptogenic paroxysms: Modern approaches and clinical correlations. Neurology 29:1014-1022, 1979

9. Guey J, Bureau M, Dravet C et al: A study of the rhythm of petit mal absences in children in relation to prevailing situation: The use of EEG telemetry during psychological examinations, school exercises, and periods of inactivity. Epilepsia 10:441-451. 1969
10. Geier S: A comparative tele-EEG study of adolescent and adult epileptics. Epilepsia 12:215-223, 1971
11. Friis ML, Lund M: Stress convulsions. Arch Neurol 31:155-159, 1974
12. Penry JK, Porter RJ, Dreifuss FE: Simultaneous recording of absence seizures with video tape and electroencephalography. Brain 98:427-440, 1975
13. Escueta AV, Kunze U, Waddell G et al: Lapse of consciousness and automatisms in temporal lobe epilepsy: A video tape analysis. Neurology 27:144-155, 1977
14. Penry JK, Porter RJ, Dreifuss FE: Quantification of paroxysmal abnormal discharge in the EEGs of patients with absence (petit mal) seizures for evaluation of anti-epileptic drugs. Epilepsia 12:278-279, 1971
15. Browne TR, Penry JK, Porter RJ et al: A comparison of clinical absence seizure frequency with estimates based on prolonged telemetered EEGs. Neurology 24:381-382, 1974
16. Browne RR, Dreifuss FE, Dyken PR et al: Ethosuximide in the treatment of absence (petit mal) seizures. Neurology 25:515-524, 1975
17. Dreifuss FE, Penry JK, Rose SW et al: Serum clonazepam concentrations in children with absence seizures. Neurology 25:255-258, 1975
18. Desai BT, Porter RJ, Penry JK: The psychogenic seizure by video tape analysis: A study of 42 attacks in six patients. Neurology 29:602, 1979
19. Holmes GL, Sackallares JC, Ragland M et al: Pseudoseizures in childhood: A clinical appraisal using prolonged EEG telemetry and video tape monitoring. J Ped 97:554-558, 1980
20. Sutula TP, Sackallares JC, Miller JQ et al: Efficacy of intensive monitoring and prolonged hospitalization in refractory epilepsy. Annals of Neurology 6:162, 1979
21. Boenigk HE, Stenzel E, and Wehmeyer W: The requirements and uses of a long term EEG monitoring unit—Initial experience after one year of operation. Epilepsia 21:203, 1980

---

*This investigation was supported by a Teacher-Investigator Development Award to Dr. Holmes (NSI-EA 1 K07 NS 538-01 NSPA) from the National Institute of Neurological and Communicative Disorders and Stroke.*

## Who Initiates Physician Visits?

Although about 60 percent of all visits to the doctor are initiated by the patient, the percentage varies according to the place of the visit and its purpose, the characteristics of patients, and the geographic location, according to a preliminary report issued recently by the Department of Health and Human Services.

The percentage of appointments arranged by doctors during a previous visit was higher for visits in hospital outpatient departments than for visits in physician offices, the preliminary report said.

Visits for older people were more likely to be initiated by the physician than visits for younger persons. And visits for a prenatal or postnatal examination were more likely to be initiated by the physician, while those for an eye examination for glasses were primarily initiated by the patient.

The report, the third of a series of preliminary reports resulting from the continuing analysis of the massive National Health Care Expenditures Study (NHCES), also indicates variations according to physician supply. The percentage of physician-initiated visits ranged from 31.1 percent for states with fewer than 100 physicians per 100,000 people to 39.6 percent in states with 175 or more doctors per 100,000 people.

There also were regional variations. The heavily-populated Northeast had a significantly higher percentage of physician-initiated visits (40.1 percent) than the south (33.9 percent). The North Central region and the West were 34.8 percent and 37.7 percent, respectively.

Although the findings show differences in who initiated physician vists by the type of visit, they do not indicate whether the visits were medically appropriate, the severity of illness among the patients surveyed, or the quality of the services provided.

"The question of who creates demand for medical services is an important consideration in the development of national health insurance and in assessing the impact of a potential physician surplus predicted for the end of the decade," said Surgeon General Julius B. Richmond. "While conclusions cannot be drawn from the study at this point, we are confident that the final results will help to identify conditions which influence physicians and patients to initiate visits to the doctor and their effect on both the quality and cost of medical care."

MEDICAL GRAND ROUNDS
YALE UNIVERSITY SCHOOL OF MEDICINE

# Diseases of the Workplace: The Clinician's Role

MARK R. CULLEN, M.D. AND JAMES M. ROBINS, M.D.

DR. CULLEN: It has long been recognized that environmental agents, in particular those to which one is repeatedly or heavily exposed, can produce significant disease. The first detailed descriptions of such sequelae were recorded in the 16th century by Paracelsus in his six volume treatise on the mining of heavy metals.[1] Ironically, it was he who also introduced some of the more toxic metals—mercury and arsenic—into the therapeutic armamentarium, proclaiming a cardinal rule of toxicology that the only difference between a poison and a remedy is dose.

About one hundred years later, the Italian Ramazzini founded modern occupational medicine with the publication of *De Moribus Artifactum.* In this tract, the author describes in remarkable and astute detail dozens of occupational diseases and the means for their prevention. More importantly, he exhorted his colleagues and students to amend the medical history as promulgated by Hippocrates to include an account of the patient's work.

At the beginning of the 18th century, the Englishman Percival Pott provided the first hint that cancer could be occupational in origin with his observation that scrotal cancer, a rare disease, was fairly common in chimney sweeps. In noting this association, Pott anticipated both the modern theories of chemical carcinogenesis as well as the theoretical basis of epidemiology as a tool for determining the etiology of chronic diseases.

Over the next 150 years, however, progress slowed. More alarmingly, European interest in this area failed to follow technological advances to the New World. In her autobiography, *Exploring the Dangerous Trades*, the first great American in Occupational Medicine—Alice Hamilton—described her embarrassment while attending her first international conference in 1910: "It was . . . mortifying to be unable to answer any of the questions put to us. What was the rate of . . . poisoning in such and such an industry? What legal regulations did we have for the dangerous trades? What was the system for compensation? Finally Dr. Gilbert . . . dismissed the subject: "It is well known there is no industrial hygiene in the United States. *Ca n'exist pas.*"[2]

The past decade, ushered in by the passage of the federal Occupational Safety and Health Act of 1970, has witnessed a spectacular upsurge of activity in this arena. Unlike many other areas of health research, however, dominant work in the field has come not from the ranks of internists and Departments of Medicine but from epidemiologists - identifying exposed populations at risk for various morbid events - and toxicologists, studying pathophysiologic consequences of suspected toxins in animal and *in vitro* assays.

Based on this kind of information and occasional case reports and clinical studies by practitioners, some staggering estimates of the importance of occupation as a cause of disease have emerged. Current government estimates suggest over 500,000 new cases annually, with 100,000 deaths. An National Cancer Institute report has recently projected that as much as 38% of all cancer may be in part attributable to workplace exposures.[3] In fairness, not everyone agrees with these estimates. But even if they exaggerate by a full order of magnitude, as internists these figures are, or should be, very distressing.

Consider the following. Although most of us care for men and women working at all kinds of jobs in this

---

This article was originally presented as Medical Grand Rounds, Yale University School of Medicine, May 21, 1980.

The participants were the following:

MARK R. CULLEN, M.D., Assistant Professor of Medicine, Department of Internal Medicine, and Director of the Occupational Medicine Program, Yale University School of Medicine.

JAMES M. ROBINS, M.D., internist and co-founder of the Occupational Medicine Program. He is currently a fellow in Preventive Medicine, Yale University School of Medicine.

Reprint requests to: 333 Cedar St., New Haven, CT., 06510 (Dr. Cullen).

heavily industrial part of the country, few of us are aware of this 'epidemic' of occupational diseases in our daily practice, as we are for example, when there are 100,000 cases of influenza in a year. Further, most of us - unless your medicine training was very different from my own - would feel somewhat unprepared to tackle these problems even if we did recognize them.

All of that of course sounds obvious and noble enough, yet serious impediments have and continue to block our way. It is now a cliche that environmental medicine has been traditionally absent from medical school curricula. Yet so were discussions of so many things - prostaglandins and endorphins and Legionnaire's Disease for example - about which we have been able to learn as we went along. Our problem here is deeper. For one thing, there is no decent compilation of the kinds of exposures and consequent effects one might expect to see in this area as there are for the reportable infectious diseases. Since most of us are quite ignorant of industrial processes this is a serious deficiency.

Unfortunately, even if such a catalogue were available, accurate recognition and differential diagnosis would still be difficult because of the dearth of detailed clinical description of so many entities. Even where clinically applicable material is available, it often relates to the findings in dramatic epidemics which may differ considerably from the appearance of sporadic cases in the office or hospital, a clinical-epidemiologic lesson we all learned from Legionnaire's Disease. A futher consequence of these limitations is that few occupational diseases, including some of the most common like lead poisoning, have never been studied at the level of 1980 state-of-the-art medicine, some prevalent occupational lung diseases being notable exceptions.

With these notions in mind, a group of us in the Department of Internal Medicine, joined by colleagues in Dermatology, Radiology, Lab Medicine and Pathology organized the Occupational Medicine Program a year ago. The Program's task, in part, was to provide the services and address the problems I have outlined here.

Before I proceed to show you some of the more illustrative of the approximately 400 cases we have evaluated in our first year, I would like to describe our Program's clinical strategy, summarized in Figure 1.

The top tract is merely a breakdown of what all internists do in routine practice - history, physical exam and laboratory studies aimed at defining pathophysiologic processes. We do perhaps place heavier than average emphasis on challenge and stress testing, primarily because work itself is performed under nonrest conditions. It is often necessary to reproduce these conditions to evaluate complaints which if truly work related cannot be expected to "just go away" as 'functional' complaints in the general patient population often do.

The lower tract in the schema—the search for an identifiable etiology for established pathological states or altered physiology—is what currently distinguishes our approach from routine practice. First, a detailed exposure history is obtained, coupled with an attempt to obtain objective environmental data when feasible. Next, we review all available epidemiologic, toxicological and clinical literature pertinent to the exposure and job type. Fortunately, this can be accomplished readily with the aid of widely available computer reference banks and a good library. Our last step is the application of specific laboratory tests, suggested by the literature or extrapolated from it, to confirm or exclude a toxic cause for disease. This phase is often accompanied by an invitation to examine other similarly exposed co-workers in whom the situation may be clearer, especially if the patient's problem is complicated by prior or intercurrent disease or habits. On the basis of all of this we will attempt to answer specifically the question of whether an agent or agents to which the patient has or is being exposed is casual or contributory to the defined pathophysiologic process.

To demonstrate how all this works in practice and highlight some of the fundamental concepts of occupational medicine, I would like to introduce my colleague Dr. James Robins who will present two representative cases.

DR. ROBINS: The first case is that of Mr. S, a 49-year old black male steelwire spooler, who was brought to medical attention by his wife. Her chief complaint was "I need a doctor or lawyer." The patient himself showed little recognition or understanding of his problem. His wife described a six-month deterioration in her husband, characterized by poor job performance, inattention to his customary household duties, unusual irritability and a new stinginess with money, absence of sexual interest, social isolation, poor memory, anorexia, weight loss. Convinced that these symtoms were evidence that her husband no longer loved her, she planned consultation with a lawyer to institute divorce proceedings.

A physician in the community consulted three months previously had found hypertension and instituted diuretic therapy.

On the day prior to his clinic visit, Mr. S returned home from work with a form documenting a blood-lead level of 94 *u*g%.

Exposure history: The patient worked in a steel-wire mill. The steel was pulled into wire and patented at high temperatures. It was then prepared for further processing by being dipped into molten lead. Finally, the wire was wound into spools in a work area separate from the molten lead process. Mr. S was a spooler.

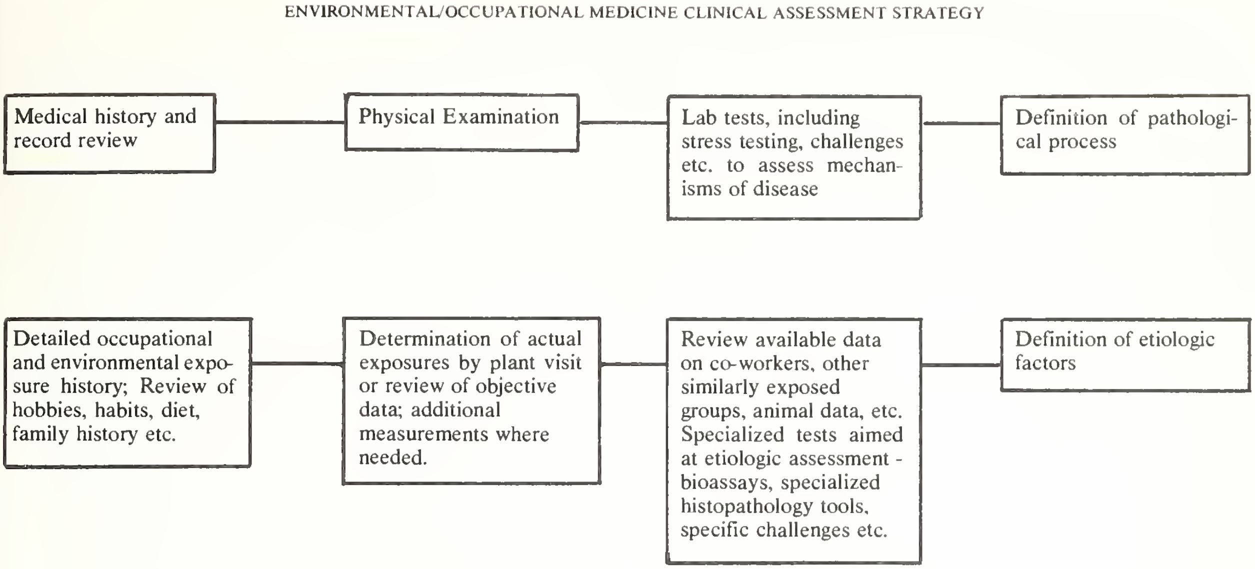

ENVIRONMENTAL/OCCUPATIONAL MEDICINE CLINICAL ASSESSMENT STRATEGY
Medical history and record review
Physical Examination
Lab tests, including stress testing, challenges etc. to assess mechanisms of disease
Definition of pathological process
Detailed occupational and environmental exposure history; Review of hobbies, habits, diet, family history etc.
Determination of actual exposures by plant visit or review of objective data; additional measurements where needed.
Review available data on co-workers, other similarly exposed groups, animal data, etc. Specialized tests aimed at etiologic assessment - bioassays, specialized histopathology tools, specific challenges etc.
Definition of etiologic factors

Figure 1
Schematic view of the clinical approach to patients evaluated for work related medical disease.

Physical examination was remarkable for a depressed appearing black male with flat affect, without interest in his problems. He was unable to give a coherent description of his work. Other than slight difficulties with short-term memory, his formal mental status exam, by usual clinical testing methods, was not grossly impaired. The rest of his exam, including neurological, was normal.

Routine laboratory studies were normal. The blood-lead level was 117 μg% (normal $<$ 20). A free-erythrocyte propoprophyryn was 146 μg/100 ml red blood cells (normal 16-36 units/100 ml). The serum thyroxine ($T_4$) was 2.8 μg/100 ml (normal 4-11μg/100 ml) with a calculated free thyroxine of 0.5 (normal 1.0-2.0).

EMG and nerve conduction studies were normal and EEG showed non-specific abnormalities without focality. TSH level, TRH stimulation test, tomograms of the cella turcica, insulin tolerance test, LH (leutinizing hormone), FSH (follicle stimulating hormone), testosterone, and prolactin levels were normal.

Diagnoses of lead encephalopathy and possible hypothalamic hypothyroidism were entertained.

The patient then underwent a neuro-psychological testing battery. These tests are a recent addition to our evaluation schema to attempt objective evaluation of the degree and natural history of CNS intoxication. They consist of standard IQ tests, performance tests of visual and tactal motor coordination, dexterity, attentiveness, reaction time, and so on. Speed and accuracy of performance can be quantitated. In occupational cases, such objective verification is doubly important because ensuing compensation cases are often sharply contested and validation of clinical impressions becomes necessary.

Results of these tests showed derangement in many of the individual skills, typical of previously reported cases of adult lead encephalopathy from the literature.

The patient was admitted to the hospital, de-leaded with EDTA and penicillamine, and removed from further exposure.

The blood-lead and FEP returned to normal over several months. Clinical improvement was substantial over these first few months. The patient became outgoing, witty and pleasant. Nonetheless, problems with memory, sexual function, and emotional lability persisted. The patient now, over thirteen months later, has still not returned to baseline. Repeat neuropsychological testing in the past several months showed moderate improvement but many abnormalities remain.

Thyroid function tests finally returned to within the normal range at ten months post-treatment. Clinically the patient remained euthyroid throughout. The relationship of his thyroid abnormalities to lead intoxication will be discussed further by Dr. Cullen.

The lessons learned from this case include:

1) Without a piece of paper with his blood-level on it, the patient may never have consulted a doctor. His wife was preparing to consult a lawyer; the patient, himself, was unconcerned.

2) Even if a physician had seen the patient, without an occupational history a diagnosis of depression and

hypothyroidism would have been made and, after a trial of thyroid replacement, treatment with tricyclic antidepressants would have been likely.

3) If the physician had inquired into the specifics of the job, exposure to lead still would not have been uncovered because neither the company nor the workers themselves knew that lead was present in the spooling room in which Mr. S worked. In fact, the lead had remained on the wire as it came from the patenting room above. Once measured, air levels of lead were demonstrated to be high in the spooling room. The route of occupational lead absorption is chiefly pulmonary and not gastrointestinal. In general, neither eating habits nor poor personal hygiene are the major source of occupational lead absorption.

4) The patient was lead-poisoned without a single classic finding of adult lead poisoning, i.e. without colic, wrist drop, abnormal EMG or nerve conduction studies, anemia or renal disease. His sole manifestation, lead encephalopathy, has in the past been felt to be rare in adults; but recent studies utilizing neuropsychological testing techniques have demonstrated that CNS symptoms are a common manifestation of adult lead poisoning.

How then did Mr. S happen to have that blood-level drawn? A new Occupational Safety and Health Administration law, in recognition of the frequency of "sub-clinical" lead intoxication (i.e. cases such as Mr. S's), has required since 1979 the monitoring of air and blood-lead levels in industries where lead is used. How many other Mr. S's, divorced and/or on tricyclics, will be uncovered because of the foresight of this new law remains to be seen. We have seen at least ten in our clinic in its first year of operation.

The second case is that of Mr. R, a 34-year old white male admitted to the hospital for pneumonia.

History of present illness: The patient was in his usual state of good health until 4:30 p.m. on the day of admission at which time he experienced the abrupt onset of chills, myalgias, chest tightness, non-productive cough and shortness of breath.

Physical examination in the emergency room was negative except for a temperature of 102°C. The chest x-ray showed a right lower lobe pneumonia and questionable patchy infiltrates in the right middle lobe. Routine blood studies were remarkable for a white blood count of 22,000 with a left shift.

Exposure history: The patient had, from 3:00 to 3:30 p.m., performed his usual job of salvaging used chemical drums delivered "empty" from various local chemical plants. His job consisted of cutting the tops off the containers with an oxyacetylene torch. He said that he had been exposed, this particular afternoon, to signicant fume during the operation. The work was performed out in the open, no other worker had been doing similar work and no other workers had symptoms.

Because of the temporal relationship to fume exposure at his job, a diagnosis of toxic pneumonia was entertained.

Therefore, the company was called to obtain the name of the chemical that the supposedly empty containers had held. The barrels contained a single substance produced by a major chemical firm but, as so often the case, the generic chemical name was not on the container. Therefore, the firm was called and the generic information obtained. The substance was a polytetrafluoroethylene (PTFE) polymer disolved in a chloro-fluorocarbon solvent. The type of paint and the metal composition of the container were unknown.

We proceeded to make a specific diagnosis of probable etiologic agent responsible for toxic pneumonitis, performing the differential diagnosis and excluding the less likely potential agents. Possible toxic exposures from the outside of the container to the inside were: 1) the gases from oxidation of nitrogen in the air, 2) gas from the acetylene torch, 3) vaporized products from the paint or the metal of the container, and finally, 4) the pyrolysis products of polytetrafluoroethylene or solvent.

Air, when heated, can produce oxides of nitrogen that can cause pulmonary edema several hours after exposure. Against this diagnosis are the early fever and constitutional symptoms (these are not common in acute exposure to NOx), and the open air ventilation (concentrations of oxides of nitrogen necessary to cause pneumonitis usually require high temperatures as in arc welding and enclosed spaces to prevent diffusion).

Metal, plated with zinc, and occasionally metal containing copper or magnesium, when heated hot enough to fume the metals, can produce metal fume fever. This syndrome consists of thirst, metallic taste in the mouth, fever, chills, myalgias, and headache. Against this diagnosis is the short 1½ hour time from exposure to symptoms (in metal fume fever, a latent period of 4-8 hours is typical) and the significant respiratory symptoms - although decreased diffusing capacity has been described in metal fume fever, pulmonary infiltrate and significant shortness of breath are not part of this syndrome.

Cadmium fume from cadmium-plated metal can produce a clinical picture quite similar to those in our patient, including both pulmonary and constitutional symptoms. This diagnosis is unlikely because it would be very unusual to cadmium plate chemical drums.

The pyrolysis products of chloro-fluoro solvents include phosgene ($COC1_2$), HC1, and HF, all of which may cause pulmonary edema. HC1 and HF usually produce rhinitis, conjunctivitis and pharyngitis due to their high reactivity if they're in sufficient concentration to cause pulmonary edema.

$COCl_2$ can cause pulmonary edema without upper airway signs but again, the abrupt onset of constitutional signs of fever and myalgias is against the diagnosis of acute phosgene inhalation.

Lastly, PTRE pyrrholysis products do cause a syndrome known as polymerfume fever and can as soon as an hour after exposure produce myalgias, cough, shortness of breath, fever, chest tightness, increased white blood count with a left shift and pulmonary infiltrate on x-ray that may be lobar. Minute concentrations are sufficient so that occurrence in open areas is not unusual. 250-300°C are sufficient to create the polymer. The patient thus showed a clinical pattern characteristic of polymer fume fever. No specific diagnostic studies are available to confirm this. Occasionally high levels of fluorene in the urine have been reported.

On the basis of the diagnosis, polymer-fume fever, antibiotics were withheld, and as is usual in the course of this disease the chest x-ray cleared within 36 hours. The patient became afebrile with a white blood count returned to normal. The patient felt better, although his pulmonary function tests initially showing mild restriction continued to improve gradually over the following three months.

What are the reasons in a case such as this to try to make a specific etiologic diagnosis? First, treatment may vary depending upon the etiologic agent although little clinical data are available on the proper treatment of specific toxic pneumonitides. It has been suggested, for example, that early steroid use may prevent the latent sequelae of exposure to oxides of nitrogen.

More importantly, a worker and his employer can be accurately informed about where in their operation hazard lies and what can be done to prevent a repeat episode in other workers. The company involved switched from acetylene torch cutting of chemical drums altogether and specific work practices have been instituted when working around PTFE, including protocols for the proper handling of the material and a ban on cigarette smoking, as the material can be pyrolized by cigarettes. Thus, what may seem a rather pedantic exercise in differential diagnosis to the treating physician, may have significant public health and economic impact.

DR. CULLEN: What generalizations, then, can we make about the evaluation of occupational diseases? To begin with, crucial to our understanding of the problem generally, there is often nothing unique or peculiar about their presentations. Put simply, *occupational diseases almost always resemble other, non-occupational ones*, especially when seen outside the 'epidemic' setting of the workplace. Each of the cases presented could readily have been given an alternative diagnosis; Mr. S appeared depressed and hypothyroid; Mr. R had pneumonia. Therefore, suspicion of an occupational cause must be high as these diseases will rarely come labelled.

A second principle which emerges from our cases this morning is that patients cannot be relied upon to supply the needed exposure information. Although this is beginning to change, knowledge of toxic exposures has not been a traditional part of job training. Even employers, especially those without medical departments, often are unaware of the nature of substances they use, let alone their hazardous effects. This places the burden on the physician to establish exposures or confirm or embellish a given history.

As if this were not trouble enough, there are only confirmatory or diagnostic tests for a few conditions. Others, like polymer fume fever, can only be established by careful historical review and exposure data, coupled with a clinical syndrome which 'fits.' Even where confirmatory tests do exist, they are rarely routinely available or readily obtained.

Two further principles deserve emphasis. The first is latency. In each of the cases presented, the patient was still working with the etiologic agent. Sadly for the diagnostician, this is not always the case. Owing to often prolonged periods between exposure and the emergence of disease and progression of a chronic disease after exposure has ceased, one must be prepared to explore past as well as present exposures. To be explicit, a complete work history must include mention of all potentially harmful environments to which the patient has been subjected, however remote and however free of 'acute' effect on health. This is critical to appreciation of occupational cancer, but applies to most chronic effects of work as well.

Finally, there is one feature of occupational disease which may aid the clinician - enormously, sometimes - if not overlooked. I am speaking of the possibility that the toxic cause of a patient's disease may well have expression in co-workers. Since clinicians infrequently confront 'epidemic' clustering of disease in routine practice, except occasionally in the family, this possibility must be explicitly sought. When co-workers with comparable clinical manifestations are found, the likelihood of finding a common etiology is greatly enhanced. Negative findings, however, must be interpreted with caution. Exposures may vary considerably, even among individuals working side by side; host responses needless to say are also unpredictable. The former variation is the likely reason that only Mr. R got polymer fume fever; the latter explains the absence of clinical poisoning in many wire spoolers working with Mr. S.

As indicated earlier though, the lack of good clinical information about many consequences of work exposures extends well beyond uncertainty in "differential diagnosis." For many areas broad aspects of clinical—pathologic—environmental correlations remain unexplored. For this reason many of our clinical evaluations take us rapidly and inevitably to the limits of available information. Mr. S's case is typical.

As Dr. Robins mentioned, thyroid function tests were drawn because of our compulsion to exclude all non-environmental causes of signs and symptoms even when we have an alternative explanation as you've seen. When his work-up revealed the unusual pattern of isolated hypothalamic or tertiary hypothyroidism, we were driven to the literature for help. We did find a few scattered cases of low T4's and PBI's in lead poisoned adults but not a clue by modern standards as to its relationship to the lead, the level of the lesion, its clinical significance, natural history, associated endocrinopathy or, most importantly, how to treat it.

To start answering this, we began routinely testing workers with large burdens. Of eight tested, three had low-normal TFT's and five were clearly low. The patterns resembled that of Mr. S thus far and no other endocrinopathy has been found. More importantly perhaps, serial follow-up of Mr. S has revealed a belated but gradual return to thyroid normalcy, a full six months after return of lead level and other biochemical parameters to normal. Follow-up on the others remains incomplete.

What can we infer from this preliminary data? It certainly seems likely that measurable thyroid function is low in adult lead intoxication. Further, the pattern of abnormality appears to be tertiary by the accepted criteria. Many questions remain open though. What is the precise relationship to lead? Is it related to the

### OCCUPATIONAL DISEASES IN CONNECTICUT–1979

*By Exposure Class With Organ System Involved and Industry*

**Metals**

Lead (CNS, Rheum, GI, Endo) steel wire, pipes, radiation shields, batteries
Manganese (CNS, Resp) welding flux, manufacture
Cadmium (Renal, Resp) welding, silver plating, casting
Nickel (Skin, CNS) welding, machining
Beryllium (Resp, Systemic) electronics, stripping, metal reprocessing, waste desposal
Chromium (Upper Resp) plating
Tungsten Carbide/cobalt (Resp) hard metal grinding
Mercury (CNS) baring industry, laboratories
+ still undefined interstitial lung disease of welders
+ still undefined sarcoidosis in machinists

**Mineral Dusts**

Asbestos (Resp., Upper Resp., Ca) Manufacture and repair of ships, insulating, machinists, maintainance personnel
Silica (Resp, often with TBC) founderies, quarries
Talc (Resp) rubber, wire insulation
Fiberglass (Skin, ?Resp) everywhere

**Oils**

Oil Mists (Resp) steel mill, machining operations
Cutting Oils (Skin) all machining operations

**Solvents**

1,1,1 Trichloroethane (CNS) cleaning, degreasing operations
Trichlorethylene (CNS) degreasing
Perchlorethylene (CNS) degreasing, dry cleaning
Methyl-iso-butyl-ketone (CNS) lacquer spraying
Methyl Cellosolve (GI, Heme) maintainance, printing
Dimethylformamide (Liver, ?Renal) degreaser
Toluene (CNS) paint and lacquer thinner

**Chemicals**

Carbon Disulfide (CNS, Cardiovasc) rubber products
Cyanide (Metabolic) widely prevalant
Pesticides (Derm, CNS) sprayers, farmers
Resins (Skin, Resp) epoxy, phenolics, urea-formaldehyde, urethanes
Benzidine and Derived Dyes (Ca) textiles
PCBs (Skin, Liver, ?Ca) electrical testers
Piperazine (Resp)
Toluene Diisocyanate (Resp) lacquer spraying, chemical industry, paper making
DMA (Skin, ?Liver) aircraft industry
Methacrylate (GI, ?Reproductive) dental technologists, office workers
Tetrahydrofuran (Derm) magnetic tape manufacturing

**Organic Agents**

Brucella slaughtering house
Wood Dust (Resp)
Thermophyllic Actinomycetes (Resp)

**Physical Agents**

Radiation (Heme)
Vibration (Rheum) grinders, chippers
Noise (Hearing) everywhere
Recurrent Trauma (Rheum) burr bench operators, grinders

Table 1

Occupational Diseases in Connecticut–1979. All substances proven or suspected to cause disease evaluated in the Yale Occupational Health Clinics are listed. In parenthases, the organ systems involved are noted. Following this is a list of jobs, industries or common material names which have been associated with these diseases in our experience.

### OCCUPATIONAL DISEASES IN CONNECTICUT–1979

*By Organ System Involved*

**CNS**

Chronic Encephalopathy - Lead, Hg
Mania - Manganese
Acute Encephalopathy - Solvents
Encephalomalacia - Carbon Disulfide

**GI**

Cancer - Asbestos
Gastritis - Methyl/Butyl-cellosolve
Hepatitis - Dimethylformamide

**GU**

Bladder Cancer - Benzidine and Derived Dyes
Interstitial Nephritis - Lead
Proteinuria - Cadmium

**Heme**

Leukemia - Radiation
Aplastic Anemia - Cellosolve

**Pulm**

Cancer (upper and lower tract) - Asbestos
Asthma - Wood Dust, Resins, Piperazine, TDI
Fibrosis - Asbestos, Silica, Talc, Oil Mist, ?Welding Fume
Granulomatous Disease (Sarcoid) - Beryllium, ?Other Metal Dusts
Bronchitis - Metal Dust, Mineral Oils, Silica, Welding Flux
Pneumonitis - Teflon Fumes

**Rheumatologic**

Raynaud's - Vibration
Pruritis - Fiberglas
Burns - Acids, Alkalis, Tetrahydrofuran

**CV**

Coronary, Cerebro and Peripheral Vascular Disease - Carbon Disulfide

**Endo**

Hypothyroidism - Lead

Table 2

Occupational Diseases in Connecticut–1979: The same diseases listed in Table 1, organized by organ systems involved and the class of disease process. Substances which have been associated are listed after each disease class.

clinical symptoms? Will it go away as the lead does? Or is it rather a curious epiphenomenon of no particular import?

Hopefully in a year or two, after subjecting a much larger group of lead workers to full and serial inpatient hypothalamic pituitary work-ups and perhaps controlled therapeutic trials we can return to this forum with an answer.

Then, too, there are other curiosities which fascinate and plague us. We are currently following a half dozen welders with obscure but debilitating restrictive or mixed lung dysfunction. Biopsy of several has failed to adequately define the process at least at the light microscope level; we presently are awaiting ultrastructural analysis to suggest clues.

On another front, we recently saw our 14th case of apparent sarcoidosis from a single large aircraft engine manufacturing concern. We expected of course to find the only known culprit - beryllium - but have thus far despite full cooperation from management been unable to identify a source. So once again we are facing the likelihood of a new, unexplored association in a shop laden with multiple exotic metals and other materials.

Although after one year we can't offer the answers to these puzzles, I think you can see the kinds of possibilities we get into.

Finally, for those of you who have waited patiently to hear what occupational health problems you might encounter in this part of the world I offer our first year's *registry*. In Table 1 these are listed by causal agent and related exposure, grouped by recognizable classes of substances. In the next table, (Table 2), I have turned the table as well and provided the same list by organ system and pathology.

In closing, it is my sincere hope that with this kind of information and with your active interest and involvement, *occupational* medicine will soon be absorbed where it belongs into general internal medicine.

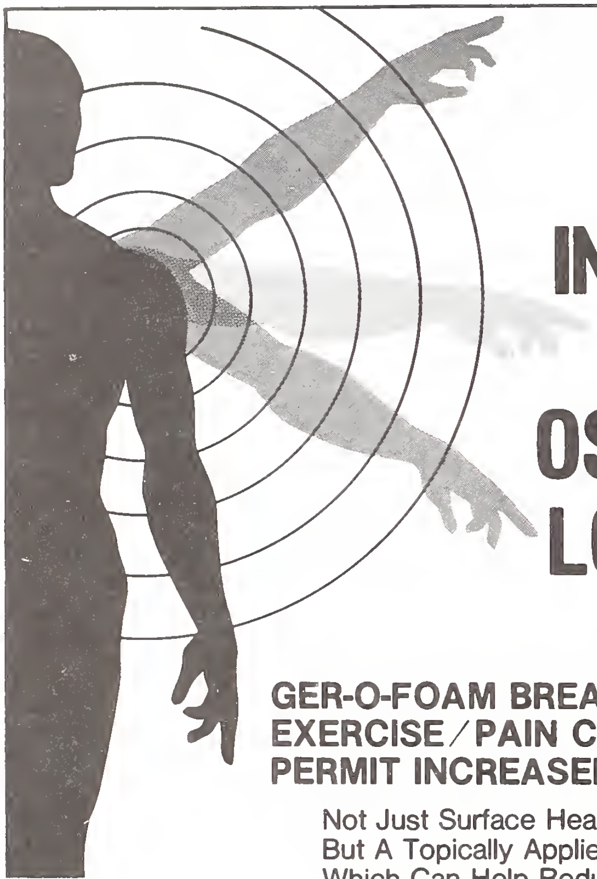
And maybe someday too, when you are as saddened and outraged at the sight of these preventable diseases as we . . .

— at lead destroying homes 400 years after Paracelsus wrote his treatise
— at scrotal cancer, still occurring in chimney sweeps 200 years after Pott
— and at a thousand diseases Ramazzini never dreamed of . . .

Maybe you'll join us in trying to relegate occupational medicine not to doctors at all but to historians interested in how we managed the morbid consequences of our civilization before we saw the light.

## REFERENCES

1. Von Hohenheim Atb. *Von der Bergsucht und auderen Bergkrankheiten.*Dilingen, 1567
2. Hamilton A. *Exploring the Dangerous Trades.* Boston: Little, Brown and Co.; 1943
3. Bridbord K, Decoufle P, Fraumeni J, et al. Estimates of the fraction of cancer in the United States related to occupational factors. Report prepared by NCI, NIEHS and NIOSH, September 15, 1978, unpublished



IN RHEUMATOID
and
OSTEOARTHRITIS
LOW BACK PAIN

**GER-O-FOAM BREAKS THE EXERCISE/PAIN CYCLE TO PERMIT INCREASED RANGE OF MOTION**

Not Just Surface Heat (a counterirritant)
But A Topically Applied Anesthetic/Analgesic
Which Can Help Reduce Minor Pain And Thus
The Need For Oral Medication.

When massaged into the skin, Ger-O-Foam's unique formula can alleviate pain around the joints affected by rheumatoid arthritis or osteoarthritis...thus possibly permitting functional exercises otherwise impossible to perform.

**"It was difficult to ignore the pain-relieving efficacy of massage with topical analgesic [GER-O-FOAM]"[1]**

Ger-O-Foam's surface analgesic-anesthetic foam relieves low back pain and minor joint pains fast...and lasts for long periods of time.

PRECAUTIONS: Do not use in or near eyes, on open wounds or mucous membranes. Discontinue if excessive irritation of the skin develops.

AVAILABLE: 4oz. cans. Approximately 125 applications in each can.

[1] Gordon, E.E. and Haas, A., Indust. Med. & Surg. 28:217, 1959.

**AVAILABLE ONLY THROUGH THE PROFESSIONS**

NEW
IMPROVED
FORMULA

**GER-O-FOAM™**

**AEROSOL FOAM FOR MASSAGE**

methylsalicylate 30% and benzocaine 3% in a specially processed oil emulsion

**GERIATRIC PHARMACEUTICAL CORP.**
397 Jericho Turnpike
Floral Park, N.Y. 11001
Pioneers in Geriatric Research

DEVELOPERS AND SUPPLIERS OF CEVI-BID • GAYSAL • B-C-BID

# Appropriateness Review: A Beginning Or An End?

THOMAS F. CLINTON, M.B.A.

The concept of Appropriateness Review (AR) as a tool to evaluate the effectiveness and efficiency of certain existing institutional health-care services came into being as part of the enactment by Congress in late 1974 of Public Law 93-641, The National Health Planning and Resource Development Act. At that time, Appropriateness Review was seen as one part of a process that included development of health planning activities at both the state and regional level, as well as the development of a uniform national Certificate-of-Need (CON) program for the review and approval of new hospital services and equipment purchases prior to their taking place.

In this context, Appropriateness Review represents a means whereby issues of both quality and access could be measured so that a proper rationalization of health-care resources could be achieved both within each state's Health Service Areas as well as within each state as a whole.

Of all the planning activities mandated by Public Law 93-641, Appropriateness Review was the last to be actually implemented. In Connecticut, for example, it was not until early 1980 that a state plan for conducting appropriateness reviews was created by the state Department of Health Services' Bureau of Health Planning and Resource Development, working together with the state's five Health Systems Agencies. This plan called for a sequence during which nine institutional health services were to be reviewed. The nine were: (1) open-heart surgery - cardiac catheterization; (2) computerized axial tomographic (CAT) scanning; (3) adult inpatient nonmaternity; (4) pediatric inpatient; (5) radiation therapy; (6) obstetrical and neonatal special-care units; (7) adult inpatient special-care units; (8) long-term care and (9) home-health services.

The state's plan was duly promulgated and implementation began.

In its first phase, Appropriateness Review called for development of a set of review criteria for the service in question. This was to come from the staff of the Bureau and the HSAs, using materials provided by the federal government and from other sources. These criteria were then to be reviewed by a select panel of providers (i.e., physicians and hospital administrators) for suggestions and possible revision. The end product of this exercise was then distributed to the five HSAs for use within their regions, with each agency retaining the right to further refine criteria to reflect local conditions.

The first subject on the list, open-heart surgery - cardiac catheterization, was chosen in part because it affected relatively few hospitals. Only six hospitals in Connecticut offer open-heart surgery and only nine hospitals perform cardiac catheterizations.

While in most of the state, these first reviews were conducted without difficulties, in two areas serious questions were raised about the HSA's handling of the matter and its final findings.

In south central Connecticut, for example, the Hospital of St. Raphael in New Haven reacted strongly to what it viewed as the HSA's inexact initial findings with respect to its open-heart surgery and cardiac catheterization capabilities. Because of the hospital's reaction, the HSA re-evaluated the seven areas first termed to be out of compliance, with the result being that the final evaluation found the hospital not to be inappropriate in these areas.

Similarly, in southwest Connecticut, Appropriateness Review proved to be very much of an adversarial process between the HSA and one institution, in this case, Bridgeport Hospital. The agency rendered a finding of "inappropriate" for the hospital's open-heart surgery unit in December, granted a hospital request for reconsideration and, in mid-March, reiterated its finding despite a presentation by the hospital of additional information relative to quality of performance. The HSA's ultimate conclusion was that the existing open heart unit at St. Vincent's Medical Center was adequate to meet area needs.

Currently reviews are being conducted within each of the state's five HSAs on CAT scanning. Once this stage is completed, the future of the entire Appropriateness Review program is open to question. In the face of diminished funding support, and the possibility of the total dismantling of the health planning system by the Reagan Administration, the state Bureau announced in late March that it is delaying any further AR activity for at least six months. The third review, adult inpatient nonmaternity, will thus begin much later than originally planned. The underlying theory, however, of testing the overall validity of existing clinical services provided by hospitals will remain, and it is quite foreseeable that future legislation, at the federal and/or state level, will encompass such an approach in a renewed effort to determine which hospitals should best provide what services.

---

THOMAS F. CLINTON is the associate vice president, planning at the Connecticut Hospital Association. A graduate of Tufts University he holds a master's degree in business administration with an emphasis in health care administration from the University of Chicago. He will receive his J.D. degree from the University of Connecticut School of Law this year.

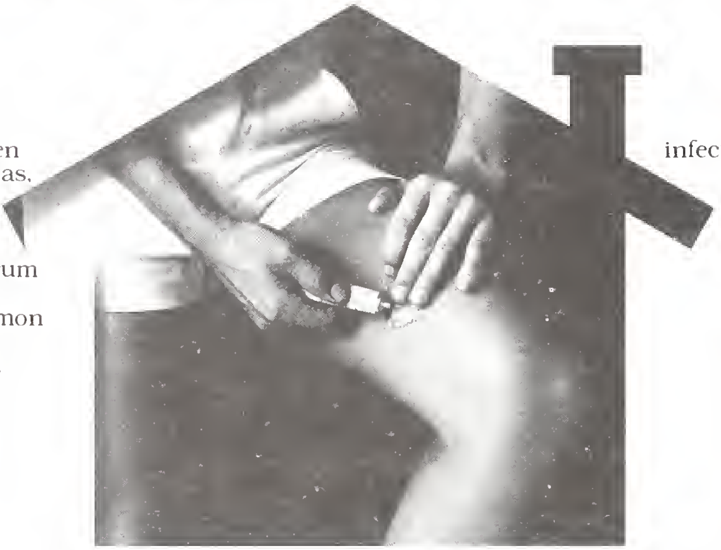
**works well in your office...**

**NEOSPORIN® Ointment**

(polymyxin B-bacitracin-neomycin)

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**works just as well in their homes.**



- It's effective therapy for abrasions, lacerations, open wounds, primary pyodermas, secondarily infected dermatoses.
- It provides broad-spectrum overlapping antibacterial effectiveness against common susceptible pathogens, including staph and strep.
- It helps prevent topical infections, and treats those that have already started.
- It contains three antibiotics that are rarely used systemically.
- It is convenient to recommend without a prescription.

**NEOSPORIN® Ointment—for the office, for the home.**
(polymyxin B-bacitracin-neomycin)

**Effective • Economical • Convenient • Recommendable**

Each gram contains Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

Wellcome
**Burroughs Wellcome Co.**
Research Triangle Park
North Carolina 27709

# Important Advances in Clinical Medicine

## Epitomes of Progress—Dermatology

### High Doses of Aspirin in the Treatment of Mucocutaneous Lymph Node Syndrome

The infantile acute febrile mucocutaneous lymph node syndrome (MLNS) was first reported in Japan by Kawasaki and his associates, but has since been reported world-wide. As of this writing the cause is still unknown.

Kawasaki disease occurs primarily in young children and is characterized by a prolonged febrile course, polymorphous rash, telangiectasia of the bulbar conjunctivae, lymphadenopathy, striking redness of the palms and soles, nonpitting edema of the backs of the hands and feet, and unique desquamation of the skin under the finger nails during recovery. During the acute phase (first month), myocarditis, pericarditis and congestive heart failure may occur. During the second month (recovery phase), myocardial infarction is possible. The mortality is about 1 percent to 2 percent. No specific treatment has been available and aspirin (acetylsalicylic acid) in usual doses has not controlled the fever.

During a recent epidemic of MLNS in New York, Jacobs, a rheumatologist, was able to show that it was impossible to attain therapeutic salicylate levels (20 mg per dl) in the acute phase of the illness with less than a total daily dose of 140 mg per kg of body weight. In fact, many children required daily doses of between 150 and 200 mg per kg of body weight. As the children recovered, serum levels of aspirin rose and dosage had to be lowered to conventional amounts (100 mg per kg of body weight per day).

Typically, patients became afebrile when the serum salicylate level reached approximately 20 mg per dl. Patients were found to malabsorb aspirin (and perhaps also to destroy it) and so required extraordinarily high doses during the acute phase of the illness.

In addition to aspirin therapy, Jacobs treated those patients with life-threatening conditions (usually congestive heart failure) with prednisone. He found that extraordinarily high doses of prednisone (for example, 3 mg per kg of body weight per day) were also required in Kawasaki disease.

Jacobs concluded that early recognition and prompt institution of effective therapy has resulted in greatly reducing the average stay in hospital. Levels of salicylate in the blood must be determined each day for dose adjustment. Because of the high incidence of aneurysms of the coronary arteries, extreme thrombocytosis and myocardial infarction during the recovery period, aspirin therapy in conventional doses was continued for two months after onset of the disease. All patients in this series recovered completely.

Kato and associates in Japan have also studied the effect of treatment of MLNS by means of coronary angiography during the recovery phase of the illness. Although they were apparently unaware of the need for high-dose therapy during the acute phase, they were able to show a definite reduction in frequency of coronary aneurysms in patients on prolonged aspirin therapy.

Alvin H. Jacobs, MD

REFERENCES

Kawasaki T, Kosaki F, Okawa S, et al: A new infantile febrile mucocutaneous lymph node syndrome (MLNS) prevailing in Japan. Pediatrics 54: 271-276, Sep 1974

Jacobs JC: Case report—Salicylate treatment of epidemic Kawasaki disease in New York City. Therapeutic Drug Monitoring 1: 123-130, 1979

Kato H, Hoike S, Yokoyama T: Kawasaki disease: Effect of treatment on coronary artery involvement. Pediatrics 63: 175-179, Feb 1979

### Acral Lentiginous Melanoma

Acral Lentiginous Melanoma (ALM) is a relatively recent addition to the clinicohistopathologic classification of melanomas. Clark and co-workers in 1975 and Reed in 1976 developed the concept of this variant to describe lesions characterized by lentiginous macules occurring on the palms, soles and subungual areas. Traditionally, the three variants of cutaneous melanoma are categorized as lentigo maligna melanoma (LMM), superficial spreading melanoma (SSM) and nodular melanoma (NM). ALM represents a fourth group and is reported to constitute 7 percent to 9 percent of all melanomas.

Clinically, ALM resembles LMM in that the lesions are frequently macular, may be irregular in shape and may show variation in pigmentation. In contrast to LMM, these lesions usually do not occur in sun-exposed areas of the skin and are distributed in regions that are free of hair.

Both sexes are at equal risk for the development of ALM. The age at onset is usually in the third through sixth decades, which is similar to the onset of SSM and NM. Although relatively uncommon in whites, ALM may account for up to 50 percent of melanomas occurring in blacks.

Histologically, ALM may appear to be innocuous in the radial growth phase, demonstrating only a diffuse hyperplasia of melanocytes in the basal epidermal layer. The melanocytes may range in character from benign-appearing spindled or epithelioid cells to bizarre and dysplastic cells. There is usually an absence of epidermal atrophy and dermal actinic damage in ALM, both prominent features of LMM. In the vertical growth phase, desmoplasia (not an uncommon feature of LMM) is also observed in ALM.

It is essential to obtain a biopsy specimen of a suspected ALM, and an in toto excision is preferable as there may be a gradation of melanocytic dysplasia from the periphery to the central portion, with some areas showing only minimal cellular atypia.

Treatment of digital ALM is by "ray amputation," which includes the entire digit plus the distal portion of the corresponding metatarsal or metacarpal bone. Lesions of the thumb may be treated by disarticulation of the metacarpophalangeal joint, which allows for subsequent reconstruction and, therefore, maintenance of apposition. Volar lesions are best removed by wide excision.

The mechanism of spread of ALM is not yet adequately described. At present, there are insufficient statistical data available on aspects such as the level and depth of invasion, mitotic activity and host response to propose definite indications for lymph node dissection, and similarly, more sophisticated forms of management of these lesions.

David R. Taylor, Jr., MD

REFERENCES

Kopf AW, Bart RS, Rodriguez-sains RS: Malignant melanoma: A review. J Dermatol Surg Oncol 3: 41-125, Jan-Feb 1977

Taylor DR Jr, South DA: Acral lentiginous melanoma. Cutis 26: 35-36, Jul 1980

Coleman WP III, Loria PR, Reed RJ, et al: Acral lentiginous melanoma. Arch Dermatol 116: 773-776, Jul 1980

## Newer Aspects of the Use of Anthralin in Psoriasis

Anthralin is an effective agent in the treatment of psoriatic lesions in patients in hospitals or day care centers. It is administered in concentrations of 0.1 percent to 1.0 percent in a hard or soft paste and may be used in combination with topically administered tars or steroids, and ultraviolet light. Clearing can be expected in 10 to 28 days. A pomade containing anthralin 0.1 percent to 1.0 percent can produce excellent results in psoriasis of the scalp. The method of action of anthralin is not yet clear; however, it is known to bind to DNA in vitro, and presumably inhibits DNA synthesis.

The major problems that prevent more successful and widespread use of standard anthralin regimens for outpatients are the following: (1) Burning of normal skin by higher concentrations necessitates careful application of the stiff paste on the lesions by a skilled nursing staff; (2) anthralin can stain bedclothes and sheets, making home use difficult; (3) prolonged applications are sometimes needed; (4) anthralin should not be used in skin folds, and (5) if anthralin inadvertently gets in the eyes, severe burning may result. These problems have been partially overcome by the newer methods of application discussed below.

Schaefer and co-workers used 1 percent anthralin with 1 percent salicylic acid in petrolatum, which they applied to the psoriatic lesions each day; the ointment was left on for one hour and then removed with soap and water. As far as possible, the anthralin should not be placed on normal appearing skin because this may cause erythema and a burning sensation. It is preferable to follow each treatment with application of an emollient ointment or cream. If this regimen is continued daily, it is successful in clearing 30 percent of the psoriatic lesions and improving an additional 50 percent. The advantage of this method is its short application time, which allows a patient to use anthralin while relaxing at home and avoids staining clothes and sheets. The chief disadvantage is occasional burning that may occur around treated plaques.

In Sweden, Brody and Johansson used 0.01 percent to 0.03 percent anthralin with 10 percent salicylic acid in petrolatum on a daily basis. This ointment does not need to be so carefully applied to lesions only, as burning of normal skin is rarely seen. It usually does not stain clothing so the ointment may be applied in the evening and morning. The main disadvantage is the slow response of lesions, which may take up to three months to resolve.

In England, Seville and co-workers compared the use of 0.25 percent anthralin in a cream base (Dithrocream; dithranol is the generic name) with 0.25 percent anthralin in an ointment base. He found the two preparations to be equally effective. However, patients preferred the easier application of the cream base although it caused more staining than the ointment base.

Anthralin continues to be an important agent in the inhospital treatment of patients with psoriasis. Newer methods of application are making its use possible to outpatients as well.

Leonard H. Goldberg, MD
Margaret Stewart, MD

REFERENCES

Harris DR, Ferrington RA: The chemistry, pharmacology, and use of anthralin in the treatment of psoriasis, chap 39, *In* Farber EM, Cox AJ (Eds): Psoriasis—Proceedings of the International Symposium. Stanford, CA, Stanford University Press, 1971, pp 357-365

Schaefer H, Farber EM, Goldberg L, et al: Limited application period for dithranol in psoriasis. Brit J Dermatol 102: 571-573, May 1980

Brody I, Johansson A: A topical treatment program for psoriasis with low anthralin concentrations. J Cutan Pathol 4: 233-243, Oct 1977

Seville RH, Walker GB, Whitefield M: Dithranol cream. Brit J Dermatol 100: 475-476, Apr 1979

## Lymphomatoid Papulosis

The clinical and histological assessment of patients with atypical infiltrates suggestive of lymphoma or leukemia but confined only to the skin has been a difficult problem for many years. In some of these patients involvement of other organs occurs within a short time and a definite diagnosis can be made. In others, however, crops of lesions may continue to develop for many years. These lesions spontaneously resolve within a few weeks and are accompanied by no other evidence of neoplastic disease. The term lymphomatoid papulosis, proposed by Macaulay in 1978, has been the most popular designation for this latter group.

The most common clinical pattern is an inflammatory papular or papulonecrotic eruption that is indistinguishable from pityriasis lichenoides acuta (Mucha-Habermann disease). Mycosis fungoides may be difficult to exclude but clinical evidence of small, short-lived papulonecrotic lesions as well as histological evidence of hemorrhage and epidermal necrosis are said to favor a diagnosis of lymphomatoid papulosis. The relationship of lymphomatoid papulosis to pityriasis lichenoides and, indeed, the nature of pityriasis lichenoides, both remain unclear. It is interesting that in some patients with this clinical pattern the condition responds favorably to ultraviolet light exposure.

Clinical diagnosis is made even more difficult by the fact that some of these patients have papular, plaque-type or nodular lesions that do not resemble pityriasis lichenoides. These lesions generally show less clinical and histological evidence of inflammation and are more suggestive of the tumors of mycosis fungoides or other lymphomas, but still may wax and wane for many years.

Although the great majority of patients reported in the literature have experienced a prolonged benign course, there have been at least three cases in which visceral lymphoma developed and one that has evolved into the more usual pattern of mycosis fungoides. The significance of the different clinical patterns is not clear at present, but it seems likely that "lymphomatoid papulosis" is not a single disease entity. The application of recently developed immunological methods may help to better define the nature of these perplexing eruptions and their relationship to lymphoid neoplasia.

At present there is no specific therapy for these eruptions and it is clear that these patients should be kept under periodic observation.

David G. Deneau, MD

REFERENCES

Macaulay WL: Lymphomatoid papulosis. Int J Dermatol 17: 204-212, Apr 1978

Black MM, Jones EW: "Lymphomatoid" pityriasis lichenoides: A variant with histological features simulating a lymphoma—A clinical and histopathological study of 15 cases with details of long term follow up. Br J Dermatol 86: 329-347, Apr 1972

Valentino LA, Helwig EB: Lymphomatoid papulosis. Arch Pathol 96: 409-416, Dec 1973

Lutzner M, Edelson R, Schein P, et al: Cutaneous T-cell lymphomas: The Sezary syndrome, mycosis fungoides, and related disorders. Ann Int Med 83: 534-552, Oct 1975

## Inflammatory Lesions of Acne Vulgaris: Current Concepts

Pathogenic microorganisms are not commonly present in the inflammatory lesions of acne, and the microorganisms that are present do not invade and multiply in the tissues. Thus, these inflammatory lesions do not involve an infection in the usual sense.

Minor inflammatory lesions are small, very superficial, immediately perifollicular and intrafollicular, short-lived and usually heal without scarring. Such lesions may be benefited by topical therapy. They appear to be the consequence of polymorphonuclear leukocyte aggregation in response to chemotactic factors in the follicle.

Major inflammatory lesions begin deeper (in the dermis), forming nodules of varying size and severity, often persisting for a long time. The crucial event responsible is disruption of the follicle wall with escape of follicle contents into the dermis. The contents include disintegrated epithelial and sebaceous cells, sebum in varying stages of chemical change, microflora including anaerobic *Propionibacterium acnes,* aerobic *Staphlyococcus epidermidis,* yeasts, metabolites of these organisms (lipase, proteases and others), free fatty acids, squalene, keratin and hair fragments. Many of these are antigenic and when combined with lipids with adjuvant properties, have the potential for induction of immune reactions. Others can cause primary irritation and foreign body reactions. Thus, the follicle contents include a variety of possible pathogenic agents.

Histologically, the major lesions present elements of mixed granuloma, and infiltrates of polymorphonuclear leukocytes, histiocytes, macrophages and lymphocytes. Fibroblasts and newly formed capillaries are commonly observed. Vasculitis is not present. Hemorrhage and necrosis with ulceration may occur and scarring can be severe.

To prevent the occurrence of major lesions it is necessary to block those mechanisms which disrupt the follicle wall. A frequent finding in early lesions is the invasion of the follicle wall by polymorphonuclear leukocytes with abscess formation. Release of lytic and toxic agents, which may damage the wall, would be a likely consequence. The concept that obstruction of the follicle ostium with subsequent build up of sebum, formation of a comedo, and pressure rupture of the follicle is untenable because it has been shown that disruption occurs in follicles in which obstruction and gross comedones are not present.

In view of the nature of the lesions and the absence of active infection, it is not unexpected that antibacterial agents exert no major beneficial effect on existing inflammatory lesions, and there are no controlled data to show that they do. To the extent that they are effective, it is by decreasing the occurrence of new lesions. Presumably, the mechanism is by reduction of the bacterial population of susceptible follicles.

Existing inflammatory lesions do respond to nonspecific antiinflammatory agents, particularly corticosteroids, either by local or systemic routes of administration. When severe lesions in great numbers are present, systemic therapy is required. In certain cases, for reasons unknown, intensely inflammatory lesions supervene in what had been mild and not otherwise unusual acne vulgaris. The lesions are characterized by pain, hemorrhage, sterile suppuration, gelatinous granulation tissue, liquifying necrosis, ulceration and severe scarring. In some instances the onset has been preceded by viral infections, measles and infectious mononucleosis, or periods of extreme emotional stress. In many cases, no trigger factors are recognized. The nature and pathogenesis of the lesions have not been clarified.

This subject was comprehensively reviewed by Goldschmidt and co-workers in a report in 1977. Systemic corticosteroid therapy was necessary for control. Most cases reverted to their previous state of relatively mild inflammatory acne after corticoid therapy, suggesting the possibility of altered reactivity.

Jud R. Scholtz, MD

REFERENCES

Goldschmidt H, Leyden JJ, Stein KH: Acne fulminans: Investigation of acute febrile ulcerative acne. Arch Dermatol 113: 444-449, Apr 1977

Esterly NB, Furey NL: Acne: Current concepts. Pediatrics 62: 1044-1055, Dec 1978

Whiting DA: Acne (Clinical Review). West J Med 131: 551-557, Dec 1979

## Update on the Use of Retinoids

The term retinoid refers to vitamin A in all its naturally occurring forms, as well as to the various synthetic analogues that have been developed. Various retinoids, particularly transretinoic acid, vitamin A alcohol (retinol) and certain retinol esters, have been used by dermatologists for many years in the treatment of several cutaneous disorders, especially those characterized by abnormal keratinization. However, the clinical usefulness of these older derivatives has been limited by their side effects. Common side effects resulting from therapeutically useful dosages of transretinoic acid include headache, anorexia, flushing, fatigue and dryness of the lips and skin. Less common side effects include nausea, polydipsia, dizziness, petechiae, loss of hair, increased perspiration, dryness of nasal mucosa, dandruff, psychological disturbances, facial edema and changes in pruritus. In addition, chronic vitamin A excess has been noted to cause joint and bone pain, prominence and irritation of the eyes, hepatomegaly, splenomegaly, urinary frequency and urgency, and increased intracranial pressure with concurrent neurological signs (more common in children and adolescents). In contrast to the poor therapeutic index of the older retinoids, some of the newer derivatives, especially 13-cis-retinoic acid and an aromatic retinoic acid derivative RO 10-9359, appear to be more effective with less toxicity.

Complete to nearly complete clearing (greater than 90 percent) in patients with lamellar ichthyosis, pityriasis rubra pilaris and keratosis follicularis has been reported in recent trials with the use of these new retinoids. However, data concerning relapse after discontinuing therapy, as well as ideal initial dosage and dosages for maintenance therapy, have not yet been determined.

Several investigators have also reported the clinical usefulness of RO 10-9359 in the treatment of psoriasis. In many trials, about 50 percent of the patients treated have had good to complete clearing. It is noteworthy that most patients chosen for these trials have severe chronic psoriasis and are often recalcitrant to conventional therapy. This new aromatic retinoid also appears to be effective in erythrodermic and pustular psoriasis. It has been shown to be an effective oral adjuvant in psoriasis therapy, increasing the clinical efficacy of more conventional treatment regimens such as topical anthralin, ultraviolet B (UVB) radiation, and psoralen combined with ultraviolet A (UVA) radiation.

The derivative 13-cis-retinoic acid has been used effectively in the treatment of cystic and conglobate acne. Peck and co-workers reported complete clearing in 13 of 14 patients with resistant cystic and conglobate acne who used 13-cis-retinoic acid. It is significant that prolonged remissions were observed in all the patients treated, lasting as long as 20 months after discontinuation of therapy.

Finally, preliminary investigations indicate that the new retinoids may be effective in the treatment of basal cell carcinomas. Peck and co-workers treated 11 patients with multiple basal cell carcinomas induced by sunlight, irradiation, arsenic or the basal cell nevus syndrome. Orally given 13-cis-retinoic acid was used and of the 248 tumors treated, 39 (16 percent) underwent complete clinical regression. Biopsy specimens were obtained after treatment for 35 of the 39 tumors; 21 of them showed complete histological clearance. Of the remaining tumors, 162 (65 percent) decreased in size and 47 (19 percent) were unchanged after treatment.

With regard to toxicity, it appears that the adverse effects observed with these two new retinoids are usually mild and rarely, if ever, severe enough to discontinue therapy. The most common side effects noted have been limited primarily to the skin and mucous membranes, which can result in various minor disturbances such as cheilitis, facial dermatitis, xerosis, dry nasal mucosa, minor nosebleeds, conjunctivitis, increased skin fragility, inflamed urethral meatus, paronychia, hair thinning, dry hair and a palmo-plantar desquamation. Other less common side effects include changes in appetite, increased thirst, headache and arthralgias without evidence of arthritis. Temporary slight elevations of the serum transaminases have also been observed in patients receiving the new retinoids. According to Peck and co-workers, this occurs in 10 percent to 15 percent of patients, but the importance of these changes is unclear because they appear to be transient, returning to normal in two to four weeks even with continued therapy. Also, elevations of triglycerides and very low-density lipoproteins have been noted with the use of the new retinoids, but the exact incidence, long-term importance and effect of dietary management on these elevations have not been determined. Again these recognized toxicities, besides being generally mild, are usually treatable with innocuous therapies, are dose dependent in severity and incidence, and are reversible after discontinuing therapy.

The mechanism of action of the retinoids is unknown. Vitamin A is known to be necessary for maintenance of normal cellular differentation of epithelial tissues. This property probably accounts, at least in part, for the therapeutic efficacy of retinoids. In addition, investigations indicate that the usefulness of 13-cis-retinoic acid in the treatment of acne may involve a direct inhibitory effect of the drug on sebaceous glands.

The new retinoids may become an extremely useful therapeutic modality for the treatment of certain dermatoses. However, further investigations need to be undertaken to determine their exact mechanism of action, efficacy in controlled trials, chronic toxicity, and the ideal dosages for initial and maintenance treatment.

Daniel A. Pardini, MD

### REFERENCES

Peck GL, Yoder FW: Treatment of lamellar ichthyosis and other keratinising dermatoses with an oral synthetic retinoid. Lancet 2: 1172-1174, Nov 1976

Peck GL, Olsen TG, Yoder FW, et al: Prolonged remissions of cystic and conglobate acne with 13-cis-retinoic acid. N Engl J Med 300: 329-333, Feb 15, 1979

Peck GL: Retinoids in dermatology—An interim report (Editorial). Arch Dermatol 116: 283-284, Mar 1980

## New Developments in the Staging and Therapy of Mycosis Fungoides

The staging of patients with mycosis fungoides is now based on two criteria: the ability to confirm the diagnosis of the disease in skin infiltrates and the ability to evaluate the extent of involvement in the patient's lymphoreticular system. The diagnosis of mycosis fungoides in the skin is made according to the extent of infiltration into the epidermis. The presence of numerous, large aggregates of abnormal lymphocytic cells or a diffuse and dense infiltrate of these cells within the epidermis indicates the presence of the disease. If there are only small aggregates or a patchy diffuse infiltration of these abnormal lymphocytic cells, then an accurate diagnosis cannot be confirmed unless there is also a dense infiltrate in the reticular dermis. Further biopsy specimens may be needed to confirm the diagnosis. Evaluation of lymph nodes is made by obtaining biopsy specimens of the superficial regional glands. A bipedal lymphangiogram should be obtained to evaluate the internal nodes. A biopsy is mandatory if the lymphangiogram shows abnormal nodes or if there is extensive skin infiltration.

Recent studies in patients in various stages of the disease showed a progressive decrease in the immunologic response, as manifested by lymphoblast transformation to phytohemagglutinin and to cells cultured from mycosis fungoides plaques on the skin as one passes through increasingly involved stages of the disease. Similarly, there is a progressive decrease in the stimulation index when the patient's peripheral blood lymphocytes are utilized as responder cells in mixed lymphocyte cultures. Different types of sera added to the culture media have either an inhibitory or facilitory effect and are found to be nonspecific and without correlation to the extent of disease.

New observations in the therapy of mycosis fungoides include the finding that mechlorethamine, when compounded in a hydrophobic vehicle (Aquaphor), instead of an aqueous solution, is more readily tolerated by the patients. In fact, it is associated with a much lower incidence of contact dermatitis as compared with the aqueous solution. Preliminary studies showed that in eight patients with no previous history of exposure or hypersensitivity to mechlorethamine, all tolerated the therapy without complication. In eight other patients with a history of pronounced hypersensitivity to mechlorethamine and an ability to become desensitized, six tolerated the mechlorethamine in Aquaphor. The other two had an immediate hypersensitivity reaction coupled with the unexpected result of immediate clearing of their mycosis fungoides. To date, the average duration of treatment using the Aquaphor vehicle has been 9 months with a range of 1 to 14 months.

Psoralens and ultraviolet light (PUVA; psoralen-ultraviolet A) have been advocated for treatment of mycosis fungoides. However, this form of therapy is effective only as long as the treatment is maintained; when discontinued, the condition usually recurs. PUVA therapy has not been advocated in erythrodermic patients who are usually extremely sensitive to all forms of therapy including electron beam and mechlorethamine. However, among seven erythrodermic patients who have been treated in the past 24 months with PUVA therapy, clearing of the condition has occurred in six. As observed with other types of mycosis fungoides, there was a recurrence of the disease in the four patients in whom treatment was not maintained. However, subsequent therapy controlled the disease and all the patients are being maintained on PUVA therapy indefinitely.

Norman M. Price, MB, ChB

REFERENCES

Rappaport H, Thomas LB: Mycosis fungoides: The pathology of extracutaneous involvement. Cancer 34: 1198-1229, Oct 1974

Bunn PA Jr, Huberman MS, Whang-Peng J, et al: Prospective staging evaluation of patients with cutaneous T-cell lymphomas—Demonstration of a high frequency of extracutaneous dissemination. Ann Intern Med 93: 223-230, Aug 1980

Edelson RL: Cutaneous T-cell lymphoma: Mycosis fungoides, Sezary syndrome, and other variants. J Am Acad Dermatol 2: 89-106, Feb 1980

## Skin Lesions in Bowel Bypass Syndrome

Intestinal bypass operations as a treatment for morbid obesity have been used since the mid-1950's. Complications have included diarrhea, distention, abdominal pain, pneumatosis cystoides intestinalis, arthralgias, arthritis, renal calculi, gallstones, hepatic abnormalities, electrolyte disturbance and erythema nodosum-like skin eruptions. Three recent articles have reported papulopustular eruptions in six patients following bowel bypass operations.

Hansen and co-workers reported on two patients in whom arthritis, erythema nodosum, and a primarily acral erythematous eruption of papules and pustules developed following jejunoileal bypass operations. The arthritis was minimally responsive to nonsteroid antiinflammatory drugs. Both the arthritis and the skin eruptions improved on treatment with various antibiotic drugs including tetracycline, metronidazole, minocycline and erythromycin. One patient's condition relapsed when antibiotic treatment was withdrawn, but it was later controlled on therapeutic doses of zinc sulfate. Bowel symptomatology was absent. No serological evidence of circulating immune complexes was found. A biopsy specimen of skin from one patient showed an intraepidermal vesicle with a mild leukocytoclastic inflammation of dermal vessels. Direct immunofluorescence of skin was negative.

Goldman and co-workers reported on two patients with end-to-end jejunoileal bypass operations in whom arthralgia, arthritis and a primarily acral erythematous papular and pustular eruption developed. Bowel symptomatology was present in one patient and fever and chills in the other. The first patient responded initially to treatment with penicillin and tetracycline. Subsequently, she did not respond to antibiotic drugs, but did respond to aspirin; later her condition cleared spontaneously. The second patient's condition improved on carbenicillin therapy, while aspirin and nonsteroid antiinflammatory drugs were not helpful. Both patients had elevated erythrocyte sedimentation rates and negative complement 3 and 4 (C3 and C4). The first patient had negative findings on antinuclear antibodies (ANA), rheumatoid factor, cryoglobulin and platelet aggregation tests, but had HLA-B27 positive tissue typing and a positive complement consumption test. The second patient had a negative complement consumption test but a positive platelet aggregation test and ANA-positive 1:320 nucleolar pattern. Biopsy specimens of skin showed a leukocytoclastic vasculitis in both patients. Direct immunofluorescence of skin from the first patient was negative.

Dicken and colleagues reported on two patients who had a primarily acral and upper chest distribution of erythematous papules and pustules, and elevated temperatures following bowel bypass operations. The episodes lasted six days or less and tended to recur. Occasionally, myalgias and polyarthralgia were noted during episodes but not during quiescent periods. The first patient responded to administration of metronidazole. The second patient did not respond to ampicillin therapy but had some decrease in the frequency of eruptions with administration of tetracycline; clearing occurred after surgical restitution of the bypassed segment of bowel. A biopsy specimen of skin from the first patient showed a subepidermal vesicle with heavy mixed-cell dermal inflammation composed of lymphocytes, polymorphonuclear leukocytes and rare plasma cells. No evidence of vasculitis was reported. Direct immunofluorescence showed a patchy, weak basement membrane pattern with C3 but was negative for IgG, IgM and IgA.

The six patients exhibited a primarily acral and upper chest distribution of erythematous papules and pustules. The severity of polyarthralgia or arthritis seemed to parallel the course of the eruption and its response to antibiotic therapy. Serological evidence of circulating immune complexes was found in two of the six cases. Histological evidence of vasculitis was present in three of four biopsy specimens.

Bacterial overgrowth in the bypassed bowel segments and immune complex formation in response to the excess of bacterial antigens have been suggested as the possible causes of extraintestinal manifestations of the bowel bypass syndrome. The response to antibiotic drugs, evidence of vasculitis in three cases and detection of immune complexes in two cases suggest that similar pathogenesis may account for papulopustular eruptions seen in bowel bypass patients. However, present therapy is empirical and no single regimen has been consistently beneficial.

Foy W. Cox, MD

REFERENCES

Drenick EJ, Ament ME, Finegold SM, et al: Bypass enteropathy—Intestinal and systemic manifestations following small-bowel bypass. JAMA 236: 269-272, Jul 19, 1976

Hansen DD, Lopez DA, Jenson KK: Pustulosis associated with bypass surgery for obesity—A dermatoarthritis syndrome. J Assoc Milit Dermatol 4: 32-37, Fall 1978

Goldman JA, Casey HL, Davidson ED, et al: Vasculitis associated with intestinal bypass surgery. Arch Dermatol 115: 725-727, Jun 1979

Dicken CH, Seehafer JR: Bowel bypass syndrome. Arch Dermatol 115: 837-839, Jul 1979

## PUVA Carcinogenesis

The efficacy of PUVA treatment with orally given 8-methoxypsoralen (P) combined with longwave ultraviolate radiation (UVA) for the clearing of severe psoriasis has been established. The palliative nature of this therapy is evidenced by the recurrence of psoriasis despite continued maintenance therapy once a week or less frequently. Treatment of recurrent psoriasis with PUVA on a more frequent schedule is a common procedure, which over the years may result in a large cumulative UVA irradiation dose expressed in terms of joules per cm.$^2$ The safe upper limit of ultraviolet A dosage from PUVA therapy is not known at this time.

The risk of carcinogenesis from chronic exposure to PUVA has been an early concern. In laboratory animals given large doses of psoralen topically or intraperitoneally plus UV light, a high incidence of squamous cell carcinomas and fibrosarcomas has occurred. The oral administration of psoralen in animals, once thought to be photoprotective, may also produce these tumors in conjunction with UV light. More and more evidence has emerged from in vitro studies that PUVA can be carcinogenic depending on the dose. PUVA has a mutagenic effect in bacterial systems. Sister chromatid exchanges, which have been employed as a cytologic means for the detection of potential carcinogens, have been observed in PUVA cells in vitro but not in vivo. It is known that exposure to nonionizing radiation and to PUVA can affect components of the immune system, which may play a role in photocarcinogenesis.

In humans, a type of epidermal dystrophic change similar to that which occurs in actinic keratoses has been observed in about half of 37 patients treated with PUVA. These changes, which were present at clearing and after a year of therapy, may indicate that cells have been altered genetically by somatic mutation. Whether the epidermal dystrophy is transient or represents a persistent abnormality is being investigated further.

Clinical evidence of PUVA carcinogenicity has emerged from a multicenter follow-up study of more than 1,300 patients. Stern and co-workers documented a total of 48 cases of basal cell and squamous cell carcinomas in 30 patients treated with PUVA during an average observation period of 2.1 years. A significant increase in the incidence of cutaneous cancer was found in patients with previous skin cancers and in those with a history of exposure to ionizing radiation, when compared with the expected risk for an age-sex and geographically-matched population. Of particular concern was an inverse in the expected ratio of basal epitheliomas to squamous cell carcinomas, as well as the frequent occurrence of squamous cell carcinomas in areas of the body that were not exposed to the sun. Whether all PUVA-treated patients will be at increased risk for cutaneous carcinogenesis after a longer period of latency has elapsed remains to be determined.

Because of a probable long latent period for carcinogenic effect, younger persons are at greater risk for long-term side effects. For this reason, the Committee on Drugs of the American Academy of Pediatrics has recommended that children not be enrolled in PUVA treatment programs.

A further concern relating to ocular damage following PUVA exposure is based on animal experiments. The exact length of time that photoactive psoralen remains in the lens of the eye is not known. Because of a risk of cataract formation, eyes must be carefully protected with UVA-blocking sunglasses from time of ingestion of psoralen throughout the active treatment program according to published guidelines. During treatment in the light unit, UVA-opaque goggles are worn.

PUVA therapy of psoriasis remains investigational. In selected patients with severe disabling psoriasis that has been resistant to conventional therapy, PUVA treatment may be administered according to established guidelines with proper precautions taken to minimize potential toxicity to the skin and eyes.

Elizabeth A. Abel, MD

REFERENCES

Farber EM, Abel EA, Schaefer H: PUVA appraisal. Br J Dermatol 99: 715-717, Dec 1978

Stern RS, Thibodeau LA, Kleinerman RA, et al: Risk of cutaneous carcinoma in patients treated with oral methoxsalen photochemotherapy for psoriasis. N Engl J Med 300: 809-813, Apr 12, 1979

Ad hoc Subcommittee on Current Status of Oral PUVA Therapy Epstein JH, Farber EM (Cochairmen), Nall ML (Editor), and 27 compilers and members: Current status of oral PUVA therapy. J Am Acad Dermatol 1: 106-117, Aug 1979

Cox AJ, Abel EA: Epidural dystrophy: Occurrence after psoriasis therapy with psoralen and long-wave ultraviolet light. Arch Derm 115: 567-570, May 1979

## ANA-Negative Systemic Lupus Erythematosus

The presence of antinuclear antibodies (ANA) is generally held to be an important criterion in the diagnosis of systemic lupus erythematosus (SLE). However, careful reading of the literature shows a well-described but generally neglected small group of patients with clinical SLE and negative ANA reactions.

In 1978 Fessel reported on ten patients (whose cases had been followed for ten years) with clinical signs of disease but persistently negative reactions to ANA. Each of the ten met at least four of the American Rheumatism Association (ARA) criteria for diagnosis of systemic lupus erythematosus. He noted that Raynaud phenomenon, loss of hair and ulcers of the mouth were more common in ANA-negative patients. It is noteworthy that these signs are all unlikely to be caused by immune complex deposition. However, only one of the ten patients had kidney involvement.

Other studies show similar findings. Pollak in 1964 obtained negative results in 9 patients among 112 with SLE. He summarized the results previously reported in seven other studies containing a total of 274 patients. He noted 7 percent of patients with negative tests for ANA. In the same year, Leonhardt reported that 3 of his 71 patients with SLE had negative tests for ANA. In 1968 Zeiman and co-workers reported clinicopathologic correlation in patients with lupus nephritis; 7 percent of their 28 patients had persistently negative tests for ANA. Estes and Christian obtained negative results in 13 percent of their 150 patients. In 1974 Bartholomew observed that 5 of 121 patients had negative ANA. In 1977 Lee and co-workers noted 5 patients with negative ANA among 110 patients followed for up to five years.

ANA-negative systemic lupus erythematosus seems to be a subgroup of SLE that has not previously been given adequate attention. Raynaud phenomenon, excessive loss of hair and ulcers of the mouth are frequent in this subgroup and the patients are noted to have had prolonged survival. Whether the ANA reaction is negative because of absent production of ANA, because of their in vivo binding by tissues or because of their being hidden in circulating immune complexes, warrants further study. In the meantime, it is important that clinicians be aware that approximately 5 percent of patients with SLE may have persistently negative tests for ANA.

Dorothy J. Buckner, MD

### REFERENCES

Fessel WJ: ANA-negative systemic lupus erythematosus. Am J Med 64: 80-86, Jan 1978

Cohen AS, Reynolds WE, Franklin EC, et al: Preliminary criteria for the classification of systemic lupus erythematosus. Bull Rheum Dis 21: 643-648, 1969

Wolf L, Sheahan M, McCormick J, et al: Classification criteria for systemic lupus erythematosus—Frequency in normal patients. JAMA 236: 1497-1499, Sep 27, 1976

Provost TT: Subsets in systemic lupus erythematosus. J Invest Dermatol 72: 110-113, Mar 1979

## New Pustular Dermatoses of Infants

Two new forms of cutaneous eruptions with unknown causes have been described recently in infants.

Infantile acropustulosis is an uncommon syndrome that consists of recurrent crops of pruritic papulopustules and papulovesicles 1 to 2 mm in size occurring on the distal extremities. Although this dermatosis may be present in infants at birth, it generally begins between the ages of 2 to 10 months, and may persist for two to three years before spontaneous remission occurs. This condition predominates in black infants, and there is no family history of atopy or psoriasis.

The primary lesion is a pinpoint erythematous papule which enlarges to a well-circumscribed and discrete pustule or vesicle within 24 hours. There is no tendency to coalesce. New crops of intensely pruritic vesicopustules appear for a week to ten days, then remit for an interval of two to three weeks before recurring. Most of the lesions are distributed on the palms and soles, with lesser numbers on the dorsa of the hands, wrists, feet and ankles. The eruption is said to be worse in the summer.

Histological examination of infantile acropustulosis shows nonspecific subcorneal or intraepidermal vesicles and pustules which are filled with neutrophilic polymorphonuclear leukocytes and rare eosinophils. Results of routine laboratory examination, cultures and immunofluorescence are negative.

Infantile acropustulosis follows an intractable course and is generally unresponsive to topical steroids. Soporific doses of antihistamines are required for symptomatic relief of pruritus.

In contrast to infantile acropustulosis is the more common and benign transient neonatal pustular melanosis. The latter is typified by its invariable onset at birth, pigmented macules, vesicopustules and brief, self-limited asymptomatic course.

Transient neonatal pustular melanosis has been estimated to occur in 4.4 percent of black infants and 0.6 percent of white infants, with equal sex distribution. Neonates present at full-term with flaccid, easily ruptured pustules, measuring 3 to 5 mm in size. The pustules are not surrounded by erythema, and are found in conjunction with the more numerous hyperpigmented macules. The vesicopustules routinely rupture and resolve in 24 to 72 hours, while the pigmented macules fade in three weeks to three months. Of note is the observation that ruptured vesicopustules have a characteristic collarette of scale that surrounds a central, pigmented macule. Areas of predilection for these lesions are the chin, forehead, nape of the neck, lower back and pretibial regions. Rarely, vesicles are found on the scalp, palms and soles.

Biopsy specimens of the hyperpigmented freckles, interestingly, show only basketweave hyperkeratosis and focal basilar hyperpigmentation and lack the usual histological features of postinflammatory hyperpigmentation. Examination of vesicopustules shows intracorneal and subcorneal pustules filled with polymorphonuclear leukocytes and only sparse numbers of eosinophils. Other laboratory investigations to find a cause for this disorder have been unsuccessful.

As transient neonatal pustular melanosis is benign and self-limited in nature, no therapy is necessary.

The differential diagnosis of the two diseases discussed above should include toxic erythema of the newborn, impetigo, scabies, pompholyx, congenital cutaneous candidiasis, subcorneal pustular dermatosis and pustular psoriasis.

David A. South, MD

REFERENCES

Kahn G, Rywlin AM: Acropustulosis of infancy. Arch Dermatol 115: 831-833, Jul 1979

Jarratt M, Ramsdell W: Infantile acropustulosis. Arch Dermatol 115: 834-836, Jul 1979

Wyre HW Jr, Murphy MO: Transient neonatal pustular melanosis. Arch Dermatol 115: 458, Apr 1979

## Practical Advances in Immunohistology

Immunohistologic staining techniques are frequently used in dermatopathology as an adjunct to routine histopathology in the diagnostic evaluation of several dermatologic diseases. For several years direct immunofluorescence and, occasionally, immunoperoxidase staining methods have been used to identify depositions of immunoglobulins and complement in unfixed (Michel's holding solution or quick frozen) sections of skin. The ability to carry out such staining procedures is integral to confirming a histopathologic diagnosis of discoid and systemic lupus erythematosus, bullous pemphigoid, pemphigus vulgaris, pemphigus foliaceus, pemphigus erythematosus, dermatitis herpetiformis and herpes gestationis.

Attempts to adapt immunofluorescence staining to formalin-fixed and paraffin-embedded tissue sections have had limited success. Formalin fixation causes not only diminution of antigenicity when compared with unfixed preparations but also increased autofluorescence of various tissue elements. Because these fixation alterations reduce the sensitivity of immunofluorescence, an assumption had existed that immunohistologic staining methods could not be practically applied to formalin-fixed tissue sections.

In recent years, highly sensitive immunoenzyme staining techniques using horseradish peroxidase-labeled antibodies, have been successfully employed to localize antigens in both unfixed and formalin-fixed tissues. In contrast to immunofluorescence, immunoperoxidase-stained preparations offer the additional advantage of being permanent and can be counter-stained with routine histochemical stains. They can also be examined with routine light microscopy and can be adapted for electron microscopy.

Antigens which have been stained by immunoperoxidase methods comprise various immunoglobulins, hormones, enzymes, components of neuroendocrine cells, tumor markers and infectious agents. Some of the organisms which have been localized by immunoperoxidase techniques include *Treponema pallidum*, *Sporotrix schenckii* and *Cryptococcus neoformans*, hepatitis B antigen, herpes simplex and other viruses, and *Entamoeba histolytica*. The recent identification of specific cell surface antigens of human T and B lymphocytes has allowed the characterization of both inflammatory and malignant lymphocytic infiltrates by immunoperoxidase staining methods.

Immunoperoxidase staining offers new practical applications to the histopathologist. Antigens which previously were difficult or impossible to visualize with routine histochemical stains can now potentially be localized by immunoperoxidase techniques in either unfixed or formalin-fixed tissue sections with routine light microscopy. Because immunoperoxidase methods are relatively simple and lend themselves to a lyophilized kit form, such procedures could easily be used in pathology laboratories in local hospitals.

In addition to the practical considerations of methodology, immunohistochemical procedures require the assurance of specificity, which relies on well-characterized antisera. The recently developed ability to hybridize clones of neoplastic plasma cells in cell culture with single antibody-forming cells from immunized animals provides a vast potential in the production of highly characterized monospecific antibodies. As antigenic markers of various components of normal and immunologically altered tissues, malignant cells and infectious organisms continue to be isolated, characterized, and used to produce specific antibody immunohistologic staining methods will continue to advance our ability to better identify and understand disorders involving skin as well as other tissues.

James H. Beckett, MD

REFERENCES

Cooperative Study: Uses for immunofluorescence tests of skin and sera—Utilization of immunofluorescence in the diagnosis of bullous diseases, lupus erythematosus, and certain other dermatoses. Arch Dermatol 111: 371-381, Mar 1975

Burns J, Hambridge M, Taylor CR: Intracellular immunoglobulins—A comparative study on three standard tissue processing methods using horseradish peroxidase and fluorochrome conjugates. J Clin Pathol 27: 548-557, Jul 1974

New vistas in histopathology. Lancet 2: 930, Oct 28, 1978

*Reprinted with permission from The Western Journal of Medicine, January, 1981*

# "You've got a suit, doctor, and it's not hearts or clubs."

Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

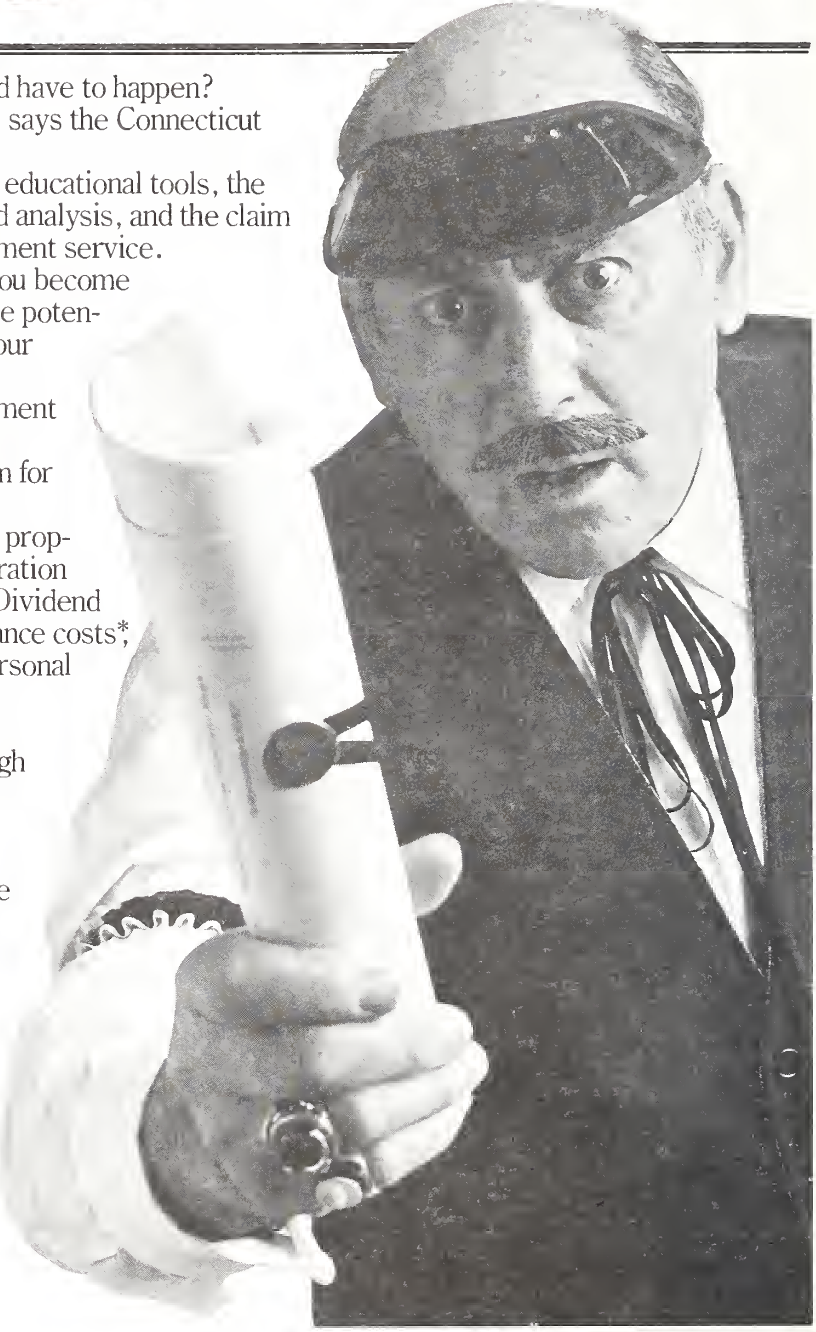
Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs*, 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.



Ætna
LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company

# A Most Important Case on Hospital Responsibility to Patients—for Physicians

JOHN F. HORTY, LL.B.

Every so often a legal decision comes along that states the law so clearly and carefully that it deserves special study. Such is the Wisconsin case, **Johnson** v. **Misericordia Community Hospital,** 294 N.W. 2d 501 (Wis. App. 1980). For these reasons we are devoting this entire issue of ACTION-KIT to the **Johnson** case and to quoting from other cases the **Johnson** decision discusses and relies upon.

Put very simply, **Johnson** v. **Misericordia Hospital** is a negligence case. Suit was brought against the hospital on the grounds that it was negligent in granting orthopedic privileges to a physician who performed an operation to remove pin fragments from a patient's (Johnson's) hip.

The appellate court found the hospital negligent on two grounds: (1) the hospital failed when granting orthopedic privileges to the physician to adhere to credentialling procedures established under both its own bylaws and statute; this breached a separate and distinct duty owed by the hospital to potential patients, and (2) the hospital failed to exercise ordinary care to scrutinize the physician's credentials before his application for orthopedic privileges was granted.

What happened is as follows. On July 11, 1975, the patient Johnson underwent surgery at Misericordia Hospital in Milwaukee for removal of a pin fragment from his right hip. The surgery was performed by Dr. Lester V. Salinsky. During the course of the operation, Johnson's right femoral artery and nerve were severed. The damage led to permanent paralysis of his right thigh muscles, with resultant atrophy, weakness and loss of function.

How Dr. Salinsky got on the Misericordia staff is another story. Misericordia Community Hospital began operation as a state approved and licensed general hospital in approximately November of 1972. On March 5, 1973, Dr. Salinsky applied for appointment to the medical staff of Misericordia, requesting full surgical and orthopedic privileges. In his application, Dr. Salinsky indicated that he was on the active medical staff of Doctors Hospital in Milwaukee with full orthopedic privileges and held consultant privileges at New Berlin Community Hospital and Northwest General Hospital.

Dr. Salinsky further stated that his privileges had never been suspended, diminished, revoked or not renewed at any hospital. And, he failed to answer any questions on the application form regarding malpractice liability insurance, nor did he identify any of his carriers. The application contained a consent permitting the hospital staff to consult with past and present malpractice carriers "who may have information bearing upon [his] professional competence, character, and ethical qualifications."

Contrary to his answers, Dr. Salinsky had experienced curtailment, investigation and denial of his hospital staff privileges at other Milwaukee hospitals. On January 10, 1973, Dr. Salinsky had been notified that his surgical privileges at Doctors Hospital in Milwaukee were severely restricted, i.e., all privileges for procedures involving the hip were withdrawn and a qualified preoperative consultation by another physician was required prior to any open surgical procedure being attempted. In 1971, St. Anthony Hospital had denied Dr. Salinsky any privileges. In December,

---

JOHN F. HORTY, LL.B., partner in the law firm of Horty, Springer & Mattern in Pittsburgh, Pennsylvania and Of Counsel to the firm of Leva, Hawes, Symington, Martin & Oppenheimer in Washington, D.C. He is the Author and Editor of two publications, ACTION-KIT for HOSPITAL LAW and ACTION-KIT for HOSPITAL TRUSTEES. Mr. Horty presently serves as President of the National Council of Community Hospitals, as Chairman of the Board of Directors of Central Medical Center in Pittsburgh, as a Director and Vice President of Estes Park Institute, and as a member of the Board of Trustees of St. Clare's Hospital, New York City.

He is an Honorary Fellow of the American College of Hospital Administrators, a recipient of the Award of Honor of the American Hospital Association, and holds an Honorary Life Membership in the American Hospital Association.

*©Copyright 1980, John F. Horty. Reprinted with permission from the October, 1980 edition of ACTION-KIT for Hospital Law. All rights reserved.*

1963, Mount Sinai Hospital had restricted Dr. Salinsky's privileges to perform complex orthopedic surgery, limiting his practice to that of a courtesy physician in the Department of General Practice. Finally, the administrators of both Northwest General Hospital and New Berlin Memorial Hospital testified that they had no records of Dr. Salinsky having been associated with their hospitals.

Notwithstanding the above, Dr. Salinsky's appointment to the medical staff at Misericordia was approved on June 22, 1973, by David A. Scott, Administrator of the hospital. Shortly after his appointment, Dr. Salinsky was elected chief of the medical staff at Misericordia. The record is devoid of any provision as to how he was elected chief of staff. On August 8, 1973, Dr. Salinsky's staff privileges and requested orthopedic privileges were marked approved and the approval endorsed by Dr. Salinsky himself.

So much for the facts. In order to find the hospital negligent to the patient, Johnson, said the court, it would have to look at four legal issues. Each will be discussed in turn.

### I. Does the Hospital Have a Duty?

The first question was whether the hospital had a duty to the patient to carefully screen Dr. Salinsky before appointing him to the staff and to limit his clinical privileges to procedures he was competent to do. As the court in its opinion said, "Misericordia is charged with wrongdoing separate and distinct from that of Dr. Salinsky. Dr. Salinsky was not an employee of the hospital, but an independent contractor. This plaintiff was a private patient who had consulted Dr. Salinsky for treatment outside of the hospital environment. In most instances, a hospital will not be liable for the negligent acts of those over whom it has no control.

"The theory of the case before us, however, is that Misericordia, by its tortious actions (or inactions) created a situation in which the natural, probable and foreseeable consequences were harm of the type which resulted. This concept of holding a hospital liable for its own negligence has been termed 'corporate negligence.' In this context, it has been defined as the failure of a hospital, entrusted with the task of providing the accommodations necessary to carry out its purpose, to follow the established standard of conduct to which it should conform. . . . Corporate negligence . . . imposes on the hospital a nondelegable duty owed directly to the patient, disregarding the details of the doctor-hospital relationship. . . .

"We are of the opinion that Misericordia's failure to adhere to established procedures with regard to the 'credentials process' involved a breach of the separate and distinct duty owed to potential patients and, therefore, created a foreseeable and unreasonable risk of harm to such patients."

In examining whether the hospital had a duty, the court examined the Wisconsin law. As the court said, "The Wis. Adm. Code, . . . makes it clear that the medical staff is 'responsible to the governing body of the hospital for the quality of all medical care provided patients in the hospital, and for the ethical and professional practices of its members.' [Citation omitted.] The measure of quality and the degree of quality control exercised in a hospital, then, is the direct responsibility of the medical staff."

***

"Thus the medical staff emerges not as a separate entity but as part of the legally constituted hospital corporation, having been created by the governing board. The medical staff becomes an organizational extension of the board, carrying out necessary quality control functions. The board in turn must inevitably render public accountability for the effective discharge of those functions. Achievement of the goal of good patient care is a direct result of an organization's effectiveness in identifying less-than-ideal patterns of practice in its potential staff. Without diligence in the areas of preventive and corrective measures by its governing members, a hospital could easily develop into an enclave of professional obsolescence and gross incompetence."

*"The medical staff becomes an organizational extension of the board, carrying out necessary quality control functions."*

The court continued, "Hospital supervision of the manner of appointment of physicians to its staff is mandatory, not optional. We view the language of the [Wisconsin Administrative] code as compelling: 'A hospital *shall* have a system based on standards to evaluate applicants for membership; *shall* evaluate each applicant; *shall* use criteria such as character, competence and training to select staff; standards required for admission to a particular medical classification *shall* be well defined; and the standards *shall* be clearly stated.' "

***

"Misericordia's bylaws were modeled after the requirements of the Wis. Adm. Code. They list, in pertinent part, these goals:

'1. To ensure that all patients admitted to the hospital, in any of its departments, receive the best possible care.

***

'3. To initiate and maintain self-government and professional discipline.

'4. To provide education and to maintain high educational standards.'

"The bylaws further established that to achieve these goals:

'The credentials Committee shall examine the application and signed agreement; investigate the character and professional standing of the applicant and in counsel with the department in which the applicant is applying, inquire into the qualifications of the applicant. The committee shall report its findings to the Executive Committee, adding its recommendations that the application be accepted, not approved or deferred. It shall further recommend the privileges to be assigned to the applicant as provided in Article VI of these by-laws. This report and recommendation shall be submitted promptly and in no event later than three months from the date of filing of the application.'

"What a defendant must do is a question of the standard of conduct required to satisfy the existing duty. In the case before us, the Wis. Adm. Code and Misericordia's own bylaws established a procedure for screening a physician's credentials upon application to the medical staff. These guidelines established the procedure that Misericordia's medical executive committee should have followed in this case."

The court then looked at what courts in other states have said about the responsibility of a hospital to properly review a physician's credentials upon application to the medical staff.

## NEVADA

"Today, in response to demands of the public, the hospital is becoming a community health center. The purpose of the community hospital is to provide patient care of the highest possible quality. . . . The staff must be organized with a proper structure to carry out the role delegated to it by the governing body. All powers of the medical staff flow from the board of trustees, and the staff must be held accountable for its control of quality. . . . The role of the hospital vis-a-vis the community is changing rapidly. The hospital's role is no longer limited to the furnishing of physical facilities and equipment where a physician treats his private patients and practices his profession in his own individualized manner.

"The right to enjoy medical staff privileges in a community hospital is not an absolute right, but rather is subject to the reasonable rules and regulations of the hospital. Licensing, *per se,* furnishes no continuing control with respect to a physician's professional competence and therefore does not assure the public of quality patient care. The protection of the public must come from some other authority, and that in this case is the Hospital Board of Trustees. The Board, of course, may not act arbitrarily or unreasonably in such cases. The Board's actions must also be predicated upon a reasonable standard." **Moore v. Board of Trustees of Carson-Tahoe Hospital,** 495 P.2d 605, 608 (1972).

## ILLINOIS

". . . [T]he integration of a modern hospital becomes readily apparent as the various boards, reviewing committees, and designation of privileges are found to rest on a structure designed to control, supervise, and review the work within the hospital. The standards of hospital accreditation, the state licensing regulations, and the respondent's bylaws demonstrate that the medical profession and other responsible authorities regard it as both desirable and feasible that a hospital assume certain responsibilities for the care of the patient." **Darling, II v. Charleston Community Memorial Hospital,** 211 N.E. 2d 253, 257 (Ill. 1965); **Hull v. North Valley Hospital,** 498 P.2d 136, 143 (Mont. 1972).

## GEORGIA

In **Mitchell County Hospital Authority v. Joiner,** 189 S.E.2d 412 (1972), the Georgia Supreme Court held that a board of directors operating a public hospital had authority to examine the qualifications of physicians seeking staff privileges, and to limit their practice to those areas in which they were deemed qualified to practice or to bar them completely from practicing if incompetent or unqualified. In affirming the court of appeals' denial of summary judgment, the supreme court stated:

"As pointed out by the decision of the Court of Appeals, the delegation of the authority to screen applicants for staff membership on the medical staff does not relieve the Authority of its responsibility, since the members of such staff act as agents for the Authority, and whether it knew or from the information in its possession the incompetency of the physician was known, is a question of fact. If the physician was incompetent and the Authority knew, or from information in its possession such incompetency was apparent, then it cannot be said that the Authority acted in good faith and with reasonable care in permitting the physician to become a member of its staff." **Mitchell County,** *supra,* 189 S.E.2d at 414.

In **Mitchell,** the plaintiff alleged, as here, that the hospital failed to require the co-defendant doctor to prove his professional competence and failed to exercise care in determining his character. The court's decision not only holds that a hospital may be directly liable for harm resulting from the negligent selection of a staff physician, but that the hospital cannot rely on the fact that an applicant is a licensed physician, and *must* undertake its own investigation of that applicant's competency.

## MISSOURI

In **Gridley v. Johnson,** 476 S.W.2d 475 (Mo. 1972), the Missouri Supreme Court . . . held that if the plaintiff could prove that the hospital had allowed members of its medical staff to violate its standards, then the hospital would be liable for granting staff privileges. The case was remanded to the trial court for determination of that issue.

## ARIZONA

In **Purcell v. Zimbelman,** 500 P.2d 335 (Ariz. App. 1972), (first reported in **ACTION-KIT** in September 1972) the plaintiff obtained a jury verdict against a hospital based on the hospital's failure to restrict Dr. Purcell's staff privileges when it knew or should have known that he lacked the skill to treat the condition in question. Plaintiff alleged that Dr. Purcell was negligent in performing a "pull through" operation which was not medically indicated. Expert testimony for the plaintiff established that another type of surgery should have been performed. In affirming the trial court, the court of appeals relied on evidence that the hospital had a physician's committee to regulate the granting of staff privileges and reasoned that the hospital had therefore assumed the duty of supervising the competence of the physicians it admitted and maintained on its staff.

## MICHIGAN

In **Ferguson v. Gonyaw,** 236 N.W.2d 543 (Mich. App. 1975), the plaintiff alleged that a hospital was negligent in not verifying the facts on a physician's application for medical staff privileges. Plaintiff claimed that a reasonable and prudent hospital would have verified the information on the application, determined that the physician had inadequate training to practice neurosurgery on its premises, and refused the physician's admission to the staff. The Michigan Court of Appeals upheld the directed verdict for the hospital, noting that while the hospital did not act as a reasonable prudent hospital in checking the physician's qualifications to be a staff member, had the hospital checked, it would have found him to be qualified. In reaching its decision, the court relied on the following rule: "One of the hospital's primary functions is to screen its staff of physicians to 'insure' that only competent physicians are allowed to practice in the hospital."

### II. Did the Hospital Fail in Its Duty?

The court then examined whether the hospital had failed in its duty to use a reasonable amount of care to examine the physician's credentials before giving him orthopedic privileges. Note again, that what is being discussed is a hospital, not a medical staff, responsibility. Elements of the medical staff leadership may carry out the function but the responsibility for the ultimate result, or failure, is the hospital's.

As the court said, " . . . for Misericordia to be liable here, it must have failed to exercise that degree of care and skill usually exercised or maintained by other reputable hospitals in similar situations."

***

"There was abundant expert testimony in this case regarding the procedures utilized by hospital committees to check a physician's references upon application for staff privileges, and the ease with which Misericordia could have had access to Dr. Salinsky's records. Once having obtained such records, Dr. Salinsky's incompetence would have been apparent to the executive committee of Misericordia Hospital.

"Mr. Charles Taylor, hospital administration consultant with the Wisconsin Department of Health, testified that the most generally followed procedure is for a credentials committee or medical staff body to contact either the administrators or chiefs of staff listed as references on a physician's application. Decisions as to medical staff privileges are thereafter based on education, previous experience and background.

"Walter Harden, executive director of Family Hospital and a board member of the Wisconsin Hospital Association, testified that he was very familiar with the 'credentials process' among hospitals in the Milwaukee area. He explained that the purpose of the 'credentials process' was to determine and evaluate past affiliations, check the veracity of an applicant's statements and to ascertain performance levels by means of peer review. He testified that requests for information regarding physicians as part of the 'credentials process' were routinely received and complied with. Finally, Mr. Harden testified that a hospital exercising ordinary care, if presented with the facts of this case, would not have granted Dr. Salinsky medical staff privileges.

"Harriet Sorrin, assistant administrator at Mount Sinai Hospital in Milwaukee, indicated that hospitals cooperated in expediting reference requests, and stated that the contents of a physician's file as to privileges and hospital involvement were generally available.

"Arthur Schmid, Jr., the attorney for St. Anthony Hospital, testified regarding the procedures involved in processing a request for medical staff privileges, and produced St. Anthony's record of an application made by Dr. Salinsky in 1971 which was rejected. St. Anthony's records indicated the scope of investigation of Dr. Salinsky's application and reflected the subsequent refusal by the credentials committee to authorize his admission to orthopedic privileges based on the information received."

Misericordia's attorney objected to this kind of evidence. The court disagreed, stating that the reports were properly considered by the jury. The evidence concerning the "credentials process" was admissible to show the existence of information regarding Dr. Salinsky's professional qualifications and the availability of such knowledge to Misericordia's medical executive committee. Misericordia could have easily found out and thus should have known of the restrictions placed on Dr. Salinsky's practice by other Milwaukee hospitals and that one hospital had denied him staff privileges.

It should be noted that once these committee reports were allowed to be seen by the jury, the jury had abundant evidence of Dr. Salinsky's clinical incompetence, furnished chapter and verse from other hospitals. This had to have a real effect on the jury's decision to hold Misericordia Hospital responsible for the injury to the patient.

### III. Existence of Malpractice Suits

Also relevant to the hospital's failure to properly evaluate Dr. Salinsky was its failure to find out that Dr. Salinsky had ten malpractice suits filed against him. The reasoning of the court on this question is most important in view of the opposition of many medical staffs to the disclosure of this information on applications and reapplications on grounds of "privacy." The emphasized the need for evaluation of this information.

"Finally, Misericordia objects to the judicial notice taken by the trial court of ten malpractice suits filed against Dr. Salinsky. The trial court allowed the evidence of such actions for the following reason:

"If this many claims (10 in number) actually found their way into the suit process, Misericordia had the further obligation to study, inspect and question Dr. Salinsky regarding each court case. Whatever the case, the individual outcome of any claim or suit is of no relevancy, but the presence of these actions constitute a 'red flag' which was discoverable to anyone who made the slightest inquiry. Even Dr. Maxey [a member of the medical executive committee at Misericordia Hospital] admitted that although he would not be impressed by any number of malpractice cases, he certainly would be interested in reviewing the facts of any particular case. He could not even do that unless the existence of the claims was made known."

*"If this many [malpractice] claims (10 in number) actually found their way into the suit process, Misericordia had the further obligation to study, inspect and question Dr. Salinsky regarding each court case."*

Misericordia argues that because the record contains no indication that the facts of the previous occurrences were the same or substantially similar to the one in question, such evidence was not relevant. Misericordia also denies that the existence of such claims was a basis for constructive notice of Dr. Salinsky's professional incompetence.

This issue was raised in [the Arizona case of] **Purcell v. Zimbelman.** Plaintiff there also attempted to introduce evidence of prior actions against the physician. The court allowed the introduction of the evidence although the acts of negligence were not of the same nature.

"Since the negligence of the hospital was predicted upon failure to perform its obligation to Zimbelman to see to it that only professionally competent persons were on its staff, it follows that its knowledge, actual or constructive, of Dr. Purcell's shortcomings, was an essential element for consideration in determining whether or not the hospital exercised reasonable care or had been guilty of negligence. Where knowledge of a danger is an issue, evidence of the occurrence of other accidents or injuries from the doing of a particular act or the employment of a particular method on occasions prior to the one in question is admissible to show that the person charged knew or should have known of the danger therein, provided it is shown that the conditions of the previous occurrences were the same or *substantially similar* to those of the one in question. *It is not necessary however, to show that such incidents occurred under circumstances precisely the same as those of the one in question— similarity in general character* suffices." [Emphasis supplied.]

The court took note of a suit after Dr. Salinsky came on the hospital's staff; one of these actions was filed after July 10, 1975 and arose out of an incident which occurred following Dr. Salinsky's appointment to the staff. The court also received evidence of an incident report relating to Dr. Salinsky's conduct during a procedure in 1974 in which a nurse complained that he was invading a sterile wound with his bare hands.

At trial, plaintiff argues that these two evidentiary items were relevant in light of the statement made by Misericordia's counsel during opening statements: "No incident regarding Dr. Salinsky's conduct was reported to the administration at any time between his being granted privileges and the plaintiff's operation." The court allowed the evidence on the ground that "plaintiff had the right to negate that assertion, and did so quite successfully."

The court went on, "This court faces a situation wherein a hospital allowed a physician to use its facilities when its governing body knew, or in the exercise of reasonable care should have known, that the physician was considered incompetent by his peers. We must stress that this is not a situation where an approved and competent staff physician committed a negligent act of which the governing body could not have had any prior knowledge. Rather, this is a situation wherein the jury had a right to find that had Misericordia, in the exercise of due care, checked Dr. Salinsky's credentials, it would or should have rejected his application for admission to the staff. Under such circumstances, expert evidence of negligent medical acts was unnecessary. Expert evidence concerning the 'credentials process' carried on by hospitals in evaluating physicians for staff privileges was necessary and was available here."

***

"Misericordia further denies any breach of duty because it contends plaintiff did not prove that the hospital *had actual* notice of Dr. Salinsky's incompetence. We must disagree. Under the rule which Misericordia would have us adopt, a simple denial of knowledge would provide a good defense. Moreover, it would promote carelessness and ignorance on the part of hospitals, as the less a hospital would know about a physician it admits to its staff, the safer and more immune it would be against any charges of negligence.

"A person has 'reason to know' a fact when he has such information as would lead a person exercising reasonable care to acquire knowledge of the fact in question or to infer its existence.

"If a person confronted with a state of facts closes his eyes in order that he may not see that which would be visible and therefore known to him if he looked, he is chargeable with 'knowledge' of what he would have seen had he looked. A person by closing his eyes for the purpose of preventing knowledge by that act brings himself within the field of knowledge as that term is used in the law."

***

"The facts before us are clear. Misericordia did not attempt any investigation regarding Dr. Salinsky's application. Ms. Bekos, medical staff coordinator of Misericordia from 1973-77, testified that as part of her responsibilities she was to contact other hospitals regarding physicians' credentials upon application for staff privileges. She testified that she was unable to locate any records in regard to such activities with respect to Dr. Salinsky's application. Mr. Harden also testified that Misericordia never requested any information regarding Dr. Salinsky. Misericordia simply takes the position that Dr. Salinsky was qualified to be on the staff because: 'Doctor Maxey testified that [the medical executive committee] determined Doctor Salinsky's training, experience, and demonstrated competency was sufficient to justify the granting of staff privileges and, therefore, there would be no further duty on the part of the hospital in that respect, and no negligence on the hospital as a matter of law.' We disagree and find a breach of the duty required as set out above."

## IV. Causation

There can be no liability for the hospital unless it is determined that such breach of the hospital's duty was a legal cause of the plaintiff's injuries. The test in Wisconsin is whether the defendant's negligence was a substantial factor in contributing to the harm from which damages are claimed.

"Misericordia consciously disregarded the welfare of patients who came to the hospital for treatment. One of the basic tenets of a hospital's existence is to provide optimal patient care. When a hospital negligently fails to exercise reasonable care in selecting physicians for appointment to its staff, it fails in its responsibility to patients and violates the very purpose for which it was established. Patients necessarily rely on hospitals to monitor the quality of care rendered in their facilities. While hospitals cannot be liable for the acts of independent contractors over whom they have no right of control, necessarily and '[w]ithout regard to the absence of any legal liability, the hospital *in admitting a physician or surgeon to its facilities* extends a moral imprimatur to him in the eyes of the public.'" [Citation omitted.] [Emphasis supplied.]

***

We, therefore, hold that the jury's determination that Misericordia was causally negligent is supported by credible evidence.

## Conclusion

Every hospital executive, every Board of Trustees and all medical staff leaders should be aware of what the court has said in **Johnson v. Misericordia Hospital**. The board delegates responsibility to the medical staff, it doesn't abdicate it. The hospital medical staff and corporate bylaws must be so organized that the delegated responsibilities *are* carried out and carried out effectively. Only the hospital will be held liable for the kinds of failures that occurred in the **Misericordia** case. And the ultimate failure, when that happens, is that the board did not see to it that an adequate job was done. *The buck stops at the Board—it never goes anywhere else.*

# Status Report on Health Maintenance Organizations

## AMA COUNCIL ON MEDICAL SERVICE

The Council on Medical Service continues to study the development and performance of Health Maintenance Organizations throughout the country. In accordance with its responsibility to provide information about HMOs, the Council submits to the House of Delegates this report on the status of HMOs.

### National Census of HMOs

The most recent annual census of HMOs, conducted by the Office of Health Maintenance Organizations (OHMO), provides data on all prepaid health plans–both federally qualified and non-federally qualified–which meet the following definition: "an organization that is responsible for actually providing or arranging for comprehensive health care services, including inpatient and ambulatory care, to an enrolled population on a prepaid, captitated basis." The census covers the year ending June 30, 1979.

At the close of the official census period, there were 215 operating HMOs in the U.S. with a total enrollment of 8,226,053. Data from the four years for which a similar census has been conducted show a 22.8% increase in number of prepaid plans since 1976 and a 36.7% increase in membership.

| | *No. of Prepaid Plans* | *Enrollment* | *% of U.S. Population* |
|---|---|---|---|
| June 1976 | 175 | 6.0 million | 2.79% |
| June 1977 | 165* | 6.3 million | 2.90% |
| June 1978 | 198 | 7.3 million | 3.34% |
| June 1979 | 215 | 8.2 million | 3.73% |

An addendum to the census indicates that by December 31, 1979, an additional ten new HMOs had been started, bringing the 1979 total to 225.

Of the 215 census-reported plans there is a fairly even distribution among the three organizational types of HMO. However, there are more IPAs than there are group or staff models, and a larger rate of increase in the number of new IPAs.

| | *1978 Census June 30, 1978* | *1979 Census June 30, 1979* | *1979 Addendum Dec. 30, 1979* |
|---|---|---|---|
| Staff | 52 | 63 | 65 |
| Group | 78 | 73 | 76 |
| IPA | 70 | 79 | 84 |

An increasing number of HMOs are seeking and receiving federal qualification status:

| | *June 30, 1978* | *June 30, 1979* | *Dec. 30, 1979* |
|---|---|---|---|
| No. of plans federally qualified | 79 | 99 | 113 |
| % of all plans federally qualified | 38.9% | 46% | 50.2% |

The annualized number of hospital days per 1,000 members increased slightly over the previous year.

| | *1978* | *1979* |
|---|---|---|
| All Plans | 408 | 412 |
| Staff | 413 | 413 |
| Group | 400 | 402 |
| IPA | 479 | 500 |

### Federal Funding of HMOs

Funding for the federal Health Maintenance Organizations Program has had an uneven history. The following table indicates the level of grant appropriations in each of the seven years of the program's existence. The figures for 1981 are from the budget request submitted by HHS for the OHMO program. They have not received final congressional approval.

---

*Reflects large number of prepaid health plans which were closed in California during the MediCal probe.

---

*EDITOR'S NOTE: This is a report of the AMA Council on Medical Service to the House of Delegates at its Interim Meeting in December, 1980.*

HMO PROGRAM - GRANT APPROPRIATIONS
(in millions of dollars)

| 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| 25 | 15 | 19 | 18.1 | 19.1 |
| 1979 | 1980* | 1981* | Actual Cumulative Total-1974-79 | Projected Cumulative Total-1974-81 |
| 23 | 47.8 | 57.4 | 119.2 | 224.4 |

*Projected figures

The federal grant program has resulted in the establishment of 106 new HMOs between 1970 and June 1980, according to a study recently done by the Group Health Association of America. Of these federally funded plans, 64 are staff or group model HMOs and 42 are IPAs. The number of HMOs started with public money represents 46% of the total number of plans now in existence. The following table gives a breakdown by organizational model of the type of funding source for the 223 HMOs in existence as of June 1980.

| | Privately Funded | Federally Funded |
|---|---|---|
| Group/Staff | 70 | 64 |
| IPA | 46 | 42 |

## Privately Funded HMOs

Blue Cross/Blue Shield activity in HMO development continues to increase. As of June 30, 1980, BC/BS operates 39 HMO programs with a total enrollment of 781,614 members. Six of these plans are federally qualified. Twenty are staff or group model plans and 19 are classified as IPAs. Thirteen of the IPAs are the *network* variation of IPA in which the HMO (Blue Cross) contracts with a number of existing group practices rather than individual physicians. The network category accounts for the largest percent of BC/BS enrollment, 53%. Examples of network IPAs being operated by Blue Cross are the two large California plans: TakeCare in northern California and Health Net in the southern part of the state.

A second category of BC/BS involvement in HMOs includes HMOs which have contractual agreements to purchase certain services from a Blue Cross or a Blue Shield plan, for example, billing, claim processing, marketing services, or out-of-area emergency coverage. A total of 30 HMOs purchase some sort of services from Blue Cross; these account for a total enrollment of 581,414 members.

INA Health Plan, Inc., a subsidiary of the Insurance Company of North America, has become the largest for-profit operator of HMOs in the country. In addition to the four HMOs which it has acquired (Ross-Loos, Los Angeles; ABC-HMO, Phoenix; Cooperative Health Plan, Spokane; HMO International, Los Angeles) INA has recently developed a brand new HMO, INA of Texas, Dallas. It also operates (with operations to buy) two Florida plans (Prepaid Health Care, Clearwater; and American Health Plan, Miami). This recent increase in corporate and third party funding for HMO development merits special concern and study in areas such as California and the Minnesota twin cities, which are already HMO intensive, in terms of its competitive impact on smaller, physician or consumer-initiated plans.

## New OHMO Programs

The National HMO Management Fellowship Program, enacted in the 1978 amendments to the HMO law, will begin January 5, 1981, with a class of 25 HMO interns. The course will be divided between classroom study at Georgetown University School of Medicine (7 weeks) and field experience in an operating HMO under an experienced HMO preceptor (24 weeks). A second class will begin March 16. Studies will emphasize financial management, marketing, management information systems, medical management, and health center administration. The OHMO-funded program is being conducted under a contract with Group Health Association of America (GHAA), American Association of Foundations for Medical Care (AAFMC), Medical Group Management Association, and Georgetown University School of Medicine.

Federal HMO law mandates that all qualified HMOs have a quality assurance program. To ensure that this mandate is being carried out, an outside review agency will conduct routine periodic reviews of all qualified HMOs and special "for cause" reviews for any HMO experiencing serious performance problems. OHMO has awarded the contract for conducting the reviews to an independent organization, the National Committee for Quality Assurance. The NCQA is governed by a nine-member board of trustees: three physicians nominated by GHAA, three physicians nominated by AAFMC, and three public members. Appointments to date have been as follows: for the GHAA, Leonard Rubin, M.D., Kaiser-Permanente of Northern California, Robert Rosenberg, M.D., Rhode Island Group Health Association, Providence, and Samuel Sapin, M.D., Kaiser-Permanente of Southern California; for the AAFMC, Michael Goran, M.D., Rockridge Health Plan, Oakland, California, C. Gaylord Weeks, M.D., Physicians Association of Clackamas County, Oregon, and Arthur Bernstein, M.D., Crossroads Health Plan, Orange, New Jersey; and public members, Walter Davis, AFL-CIO, Nikki Heideprien, an attorney.

The reviews will examine such things as the structure and results of the HMO's medical care evaluation studies, the qualifications of the HMO's professional staff, adequacy of the health care facility, arrangements with hospitals, and extent of services offered.

OHMO, Division of Program Promotion, funded an advertising campaign in conjunction with six qualified

HMOs in the Chicago area in May and June 1980. An OHMO contract in the amount of $270,000 was awarded to the advertising firm of Henry J. Kaufman and Associates for the development of a promotional campaign. The contract included preparation of television spots and marketing research to assess consumer awareness of HMOs both before and after the campaign. Kaufman claims a 13% increase in awareness, with 43% of consumers polled after the campaign expressing some knowledge of HMOs, compared to 30% before the campaign began.

The six Chicago HMOs shared the $150,000 cost of purchasing radio and TV time and newspaper space. OHMO had intended to conduct the same campaign in two other major cities; however the original plans were amended. Instead of staging additional media campaigns, Kaufman has conducted four regional seminars for HMO personnel in Denver, San Francisco, Atlanta, and Washington to help them develop their own public relations campaigns, with television materials available to them if they want them.

## GAO Report on HMOs

A new General Accounting Office report on HMOs, *Health Maintenance Organizations Can Help Control Care Costs,* was issued on May 6, 1980. Using the financial data submitted to OHMO by federally qualified HMOs, GAO employed a cost analysis method which permitted examination of the impact on total cost of one variable factor, such as the cost of hospital care or number of patients served per quarter, while holding all other factors constant. The report found that HMOs "were taking into consideration the relative costs of providing services when deciding whether to use medical staffs, ambulatory health centers, and/or hospitals" and that "there are significant economies of scale in providing comprehensive prepaid care."

## Study of HMO Cost Effectiveness

A new study of "Health Status, Utilization, and Cost Experience of an HMO Population Compared to a Blue Cross/Blue Shield Matched Control Group," conducted by the University of Rochester School of Medicine, reported its findings in June 1980. Like other comparative studies of total costs incurred by HMO and fee-for-service patients, the Rochester study used a household survey to determine out-of-pocket and out-of-plan expenditures. The study found "no statistically significant differences between the Group Health sample and the Blue Cross and Blue Shield matched control group" with regard to age, demographic charcteristics, or health status. The two groups had "virtually identical" annualized rates of doctors office visits. And finally, "in spite of higher premiums, Group Health members incurred lower out-of-pocket expenses and total costs." Group Health members spent 9.2% less per person per year for covered services than did the Blue Cross/Blue Shield Group; and 7.9% less for all services.

## HMO Legislative Agenda for 1981

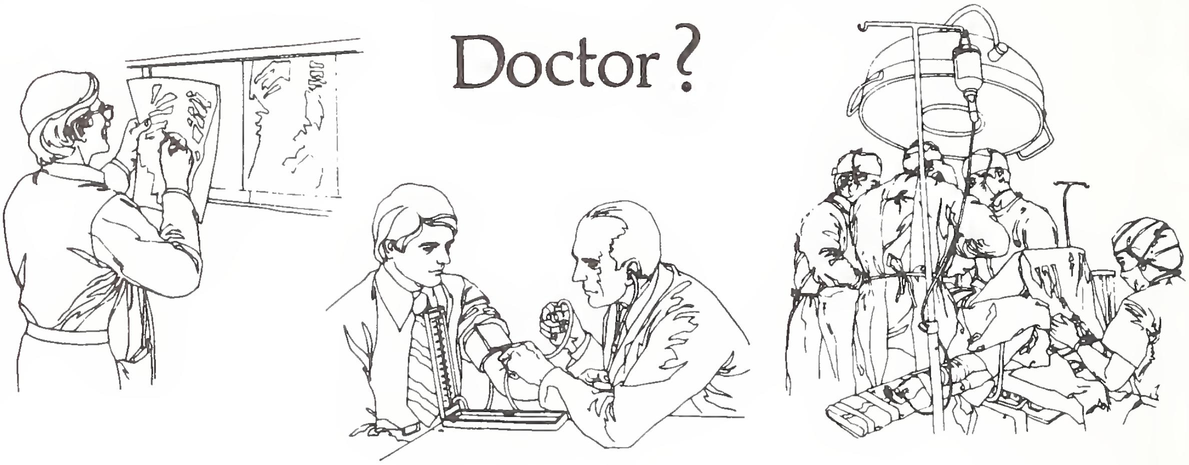
The federal HMO law expires in September 1981. An extensive congressional debate over the nature of HMO regulatory approaches will be forthcoming. The "pro competition" national health insurance bill proponents want to remove some of the more stringent restraints from HMOs operating guidelines; HHS and the HMO interest groups are interested in keeping HMO structure and rules essentially unchanged. The debate will focus on such basic HMO features as the required comprehensive benefits coverage, open enrollment periods, community rating, and "dual choice," i.e., mandatory offering by employers, as well as continued funding for new HMO development and for the new management training and technical assistance programs.

## Future Activities

The House of Delegates, in adopting Report A (A-80) of the Council on Medical Service, recommended that the Association provide information about HMOs to individual physicians and medical societies. In order to fulfill this objective, the Council's comprehensivie report on HMOs is being distributed, upon request, to persons interested in various aspects of alternative delivery and finance systems. In addition, to respond in particular to the increasing numbers of requests for information about the IPA form of HMO, a new publication has been developed to guide physicians who are contemplating the formation of this type of delivery system.

The Council on Medical Service will continue to report to the House on all major issues relevant to the development and status of HMOs. In particular, as requested by the House, the Council will provide additional information and analysis of HMO performance. Such analysis will encompass—to the degree possible—not only successful HMOs, but also those which have failed.

# Have you considered participation, Doctor?



YOU SHOULD KNOW THAT:

- The maximum allowances in the Century Contract Comprehensive Schedule of Services have been increased twice in the last 10 months. The increases, in the aggregate, amounted to 35.8%.
- It is the goal of Blue Cross and Blue Shield to update the Century Contract schedule on an annual basis.
- Participating Providers receive prompt payment for covered services directly from Blue Cross and Blue Shield.
- Participation can reduce receivables and eliminate the need to bill patients in many instances.
- Over one million Connecticut citizens are Century Contract members for whom claims totaling $68.4 million were paid in 1979.
- Your patients that are Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Physician, please write or call:

Write:
Blue Cross & Blue Shield of Connecticut
Professional Relations
Box 1930
New Haven, CT 06509
Call:
New Haven area: 777-4481
Toll free: 1-800-922-1742

**Blue Cross**
**Blue Shield**
of Connecticut

® Reg. Mark Blue Cross Assn
®' Reg. Mark Blue Shield Assn

# Hospice Programs

## AMA COUNCIL ON MEDICAL SERVICE

Over the past few years, both the scientific and popular literature has reflected growing awareness of the value of the hospice approach to care of the terminally ill. In 1978, this House of Delegates approved "the physician directed hospice concept to enable the terminally ill to die in surroundings more home-like and congenial than the usual hospital environment," reflecting increased professional recognition of the need for and use of this approach.

The purpose of the present report is to briefly summarize for the House of Delegates the origin, development, and present status of hospice programs, to identify issues regarding further study in this area, and to respond to Resolution 40 (A-80) which was referred to the Council for study.

### Definition

A hospice is not necessarily a specific facility or institution, but rather a program and concept of care. The National Hospice Organization (NHO) organized in 1978, has proposed the following preliminary definition of a hospice program:

> Hospice is a medically directed, nurse coordinated program providing a continuum of home and inpatient care of the terminally ill patient and family. It employs an interdisciplinary team acting under the direction of an autonomous hospice administration. The program provides palliative and supportive care to meet the special needs arising out of the physical, emotional, spiritual, social and economic stresses which are experienced during the final states of illness and during dying and bereavement. This care is available 24 hours a day, seven days a week and is provided on the basis of need regardless of (ability) to pay. Such care of necessity requires careful record keeping for coordination of patient care as well as for use in education and research.

Thus, hospice care may be provided in a specially built free standing facility, in a specific section of a hospital or nursing home, in the patients' homes (often as part of a coordinated home care program)—or in all these settings in a given program. The prime purpose of such care is to improve the quality of life of the patient and his family by alleviating pain, whether that pain be physical, emotional, social or spiritual. The program provides an environment for the family to be involved in the care of the patient, and to be involved in the patient's dying in such a way as to enable the patient and the family to accept the death process as much a part of life as the birth process. Following the death of the patient, the hospice may provide bereavement counseling for the family, as a preventive health care measure.

The type of atmosphere sought in such programs is described by Leonard M. Leigner, M.D., in the December 8, 1975, issue of JAMA, reporting on his visit to St. Christopher's Hospice in London, England:

> "Although I arrived with an initial resistance to continual contact with the dying patient, the actual experience was quite different from what I had expected. Instead of a terminal care or "death house" environment with cachectic, narcotized, bedridden, depressed patients, I found an active community of patients, staff, families, and children of staff and families.
>
> "Each bed has a colorful curtain around it . . . Personal touches . . . give a feeling of warmth . . . there are family rooms for visits and a large room for group activities . . . There is close face-to-face and bodily contact between the staff member and the arriving patient . . . Visiting hours are liberal with as many visitors as desired allowed (8 a.m. to 8 p.m. daily except Monday)."

### Origins and Current Status

St. Christopher's Hospice in London, founded in 1967, is generally recognized as the program upon which the modern hospice concept as implemented in the United States and elsewhere is patterned. The St. Christopher's Hospice is a free-standing facility with inpatient beds, and is not affiliated with any hospital. It also provides hospice care in the patients' homes when

---

*EDITOR'S NOTE: This is a report of the AMA Council on Medical Services to the House of Delegates at its Interim Meeting in December, 1980.*

their condition has stabilized sufficiently to permit discharge to that setting. Reportedly, all of Great Britain's other hospices—about 31 in number—are patterned after the St. Christopher's model.

The hospice movement in the United States is relatively new, with the first U.S. hospice opening its doors in 1974; growth since that time, however, has been vigorous. By September 1978, according to a 1979 U.S. General Accounting Office report, there were 59 operating hospices and 73 additional in developmental stages in the U.S. Figures supplied by the National Hospice Organization would seem to indicate that vigorous growth is continuing. As of September 1980, the NHO claimed 118 provider members and 87 cooperating members. (Provider members are operating hospices, while "cooperating" members are those in the development phases).

Of the 59 operating hospice programs identified in the GAO report, 24 were operated by and part of a hospital, five were free-standing inpatient facilities, two were operated by HMOs and one by a skilled nursing facility. The remaining 27 operated as home care programs, with no inpatient facility. Professional administrators supervised about half the hospice programs. Others had registered nurses, social workers, physicians, clergy, or psychologists directing the program.

### Hospice Services and Staffing

According to the 1979 GAO report, most of the 59 operating hospices provided home health, nursing and aide services, bereavement followup counseling and referral to other agencies for services, as well as various other medical and supportive services.

Only about half of the hospices provided 24-hour-a-day, 7-day-a-week home nursing care, which many individuals consider an essential element of hospice care. However, five additional hospices said they planned to expand their home care nursing programs to provide 24-hour-a-day, 7-day-a-week services.

According to the GAO report, hospices that provide psychiatric consultation indicated that this service is primarily provided to the hospice staff rather than the patient and family. The psychiatrist gives the staff emotional support and helps the team determine how best to serve the patient and his/her family. A few hospices, however, indicated that the psychiatrist or a psychiatric nurse may have individual sessions with either the patient or family member.

A significant feature of hospice operation is the extensive reliance on volunteer staff in many of the programs. According to the GAO report, paid staff totaled about 340 full-time equivalents for the 39 hospices reporting paid staff, and volunteer staff totaled 2,251 persons for the 53 hospices that reported such data. Paid staff ranged from a low of 0.1 full-time equivalents to a high of 51.5 (in a free standing facility hospice), while active volunteer staff ranged from 1 to 160 persons. The ratio of paid to volunteer staff ranged from 1 full-time equivalent to 0.2 volunteers to 1 full-time equivalent to 134 volunteers.

Most paid staff were medical personnel (mainly nurses, with some physicians, therapists, and technicians); the rest were administrative and clerical staff. In contrast, most volunteers were persons trained by the hospices to provide personal care services and give emotional support to the patient and family.

### Hospice Regulation and Accreditation

Only Connecticut and Florida license hospices as such. In other states, hospice programs are operated by licensed hospitals, skilled nursing facilities, home health agencies, and/or psychiatric hospitals. Some states do not license home health agencies but permit their operation; or permit hospice operation where the services it provides itself do not require licensure. The latter is the case, for example, where nursing services are the only service subject to licensure and these are provided for the hospice under contract by the Visiting Nurses Association. The licenses held by the 59 operating hospices in the GAO study were as follows:

| *License Held* | *Number of Hospices/a* |
|---|---|
| Hospital | 24 |
| Psychiatric Hospital | 2 |
| Skilled Nursing Facility | 5 |
| Home Health Agency | 19 |
| No license held/b | 28 |

a - Does not total 59 because some hospices hold multiple licenses.

b - Hospices providing no medical services requiring licensure.

There is currently no national program in operation to evaluate the quality of care provided in hospice programs. The National Hospice Organization has developed and approved standards which identify essential principles and characteristics of hospice care, as a potential base for development of a national accreditation program for hospices, and has discussed the feasibility and source of such a program with other groups including the Joint Commission on Accreditation of Hospitals. In August 1980, the JCAH received a grant from the Kellogg Foundation to study and make recommendations to the JCAH Board of Commissioners as to the needs for quality assurance in the field of hospice care, and the role of the JCAH in meeting such needs. Results of this feasibility study are expected in early 1981.

### Costs and Financing of Hospice Care

Hospices in the GAO study were not able to provide sufficiently detailed data to enable valid comparisons of the cost of caring for patients in a hospice program vs. care in the traditional health delivery system.

Some estimates of cost savings achieved by specific hospice programs are available. An article in the May

1979 issue of the Joint Commission on Accreditation of Hospitals *Quality Review Bulletin* noted claimed savings by Hospice, Inc., of Connecticut of $1,800 per patient served, on the basis that care provided under the program avoided the need for an average of two weeks of hospital care. In that same article, Royal Victoria Hospital in Montreal, Canada, is reported to have admitted 522 patients to its palliative care unit during a 26-month survey period, for an average stay of 24 days. During the same period, it treated 351 patients on its home care program an average of 59 days. The hospital projected that without this program, the same patients would have spent 50.5 percent of these days in the hospital, and estimated that its home care program saved the hospital $1.5 million during its 26-month experience. However, information to date is too limited to permit generalization to all hospices—and in fact seems inconsistent from one program to the next. For example, the average per patient cost in a British hospice has been found to be approximately 80 percent of the cost of care in a British hospital.

Not surprisingly, the GAO study found that the requirements for initial hospice funding as well as the amount of operating costs depended in great measure on the hospice's staffing pattern and the number and mix of services performed. Data on 6-month operating costs obtained from 19 hospices showed that hospices having inpatient facilities had relatively high costs compared to those offering only homecare services. One of the free-standing hospices which had an inpatient facility and provided most of the medical/supportive services commonly performed had operating expenses of $668,560 for a year's period. This program served 182 patients and had 29.8 paid staff in full-time equivalents. In comparison, one nonfacility-based program which provided relatively few medical and supportive services had operating expenses for one year of only $17,202. This program served 171 patients with 30 volunteers and 3 part-time paid staff (2 nurses and 1 secretary) and placed a value of $190,000 on the professional services donated without charge.

Forty-two hospices provided data on the sources and amount of funds needed to begin providing services. They indicated that initial funding, ranging from $100 to $3 million, came from five major sources—private donations; membership fees; hospital revenues that exceeded expenses; federal, state, and local grants and contracts; and private grants. Private organizations providing grants to hospices included the American Cancer Society, the Kaiser Foundation and churches. A few hospices said they received some federal funds from the National Cancer Institute and the Comprehensive Employment and Training Act program.

Nineteen hospices—ranging from free standing facility-based programs to purely home care programs—provided the GAO with relatively detailed data on the sources and amounts of operating funds. Revenue in these programs ranged from $1,125 to $302,610 from six major sources during varying periods of time between January 1977 and July 1978. The following table illustrates by major source, the amount of revenue these hospices received and the number receiving operating funds from each source.

SOURCES AND AMOUNTS OF OPERATING FUNDS
FOR 19 HOSPICES FROM JANUARY 1977 - JULY 1978/a

| *Source of operating funds* | *Amount of funds received* | *Number of Hospices* |
|---|---|---|
| Medicare | $160,685 | 2 |
| Medicaid | 2,650 | 1 |
| Commercial insurance and self-paying patients | 110,526 | 3 |
| Contributions | 95,075 | 16 |
| Endowments, trusts, and memorials | 10,452 | 4 |
| Grants and contracts/b | 157,800 | 12 |
| Other | 101,180 | 5 |
| Total | $638,368 | |

a - The hospices had been operating for various periods. (1 month, 6 months, 12 months, etc.) and their financial reporting periods varied. The data in this table are provided on a total of 155 months of operation between January 1977 and July 1978.

b - This category includes federal grants under the Comprehensive Employment and Training Act and Older Americans Act, federal contracts with NCI, revenue sharing funds, state grants, and private grants.

It is noteworthy that only two facility-based hospices reported receiving any Medicare reimbursement, and only three any reimbursement from commercial insurance and self-paying patients. Of the funds paid in these two categories, one free standing facility-based hospice received 84 percent.

Private and public third party payment for hospice care has up to the present been primarily for specific inpatient or home care services covered under existing contracts or regulations, rather than for any benefit package identified as "hospice care" per se. Existing provisions for covering the services of physicians and other health professionals at home and for inpatient care in hospitals or skilled nursing facilities may well apply at different times during a patient's receipt of "hospice care." However, other services provided under a hospice program—particularly those of a supportive rather than medical nature—may not be covered, or be covered only in part.

More recently, both private and public payors are experimenting with broader coverage for hospice care, in pilot studies to determine the cost, utilization and quality of such services when provided through an integrated program. According to representatives of the Blue Cross or Blue Shield Associations who discussed this subject with the Council, a number of local Blue Cross/Blue Shield plans have extended coverage on a pilot basis to hospice care provided in a number of settings including the home, the skilled nursing facility, the chronic hospital and the acute hospital-based unit. Among the coverage issues under study are terms and methods of payment for services, identifying proper financial requirements, keeping adequate records, and establishing incentives for sound financial management and appropriate utilization. To assist local plans in implementing and evaluating such studies, the National Association adopted in 1978 an "Initial Statement on Hospice Care and Hospice Services," which suggests three criteria as the basis for local plan support of hospice programs:

1. There must be demonstrated community needs for hospice services or programs.
2. There must be assurances that the care provided meets medically acceptable standards of quality and sound principles of health care administration.
3. There must be assurances that the delivery of hospice care is performed in an efficient and economical manner and physical setting that make effective use of existing community resources.

The statement also makes more detailed recommendations concerning the operation of and payment for hospice programs. These recommendations call for hospice care to be a coordinated program of home health and inpatient services, which is made available only on the basis of written, well-defined criteria addressing patient condition and prognosis and home and family conditions. There should be suitable linkages with existing providers to assure that all necessary levels of care can be made available. The care given should be subject to utilization review and quality assurance, and there should be compliance with state and local health planning requirements and with eventual accreditation standards.

The recommendations further call for initial payment arrangements on a pilot demonstration basis only, followed by thorough evaluation. As far as possible, use should be made of existing benefit provisions, with necessary benefit modifications also being tested on a limited basis. Reimbursement should be made only for patients and services meeting specific benefit and other relevant criteria. Plan and subscriber liability must have limits related to medical necessity and appropriateness of care. Finally, care should be delivered both effectively and economically, without exceeding costs of more traditional services.

The Health Insurance Association of America has issued a special advisory on hospice care to member plans, summarizing current information on such programs and identifying a number of issues requiring consideration in any expansion of coverage to hospice services.

*HCFA "Waiver" Project:* In September 1980, the Health Care Financing Administration initiated a study of the impact on the Medicare and Medicaid programs of paying for hospice services not presently covered under these programs. In 26 hospice programs selected from a number of applicants, Medicare restrictions or exclusions on payment for such services as custodial care, bereavement counseling and provision of pain killing drugs and biologicals which can be self-administered at home will be waived for the two-year duration of the study.

The specific statutory and regulatory requirements or exclusions of coverage that will be waived in the study are as follows:

1) *For in-home hospice services*
   a. Waiver of the "home bound" requirement for home health services.
   b. Waiver of the exclusion of drugs and biologicals provided in the home. Palliative drugs medically recognized and accepted will be reimbursed by the Medicare program. HCFA will determine on an individual hospice basis whether coverage and reimbursement will extend to prescription drugs such as antiemetics, antidepressants, and steroids.
   c. Waiver of the "skilled nursing requirement" so that payment will be made for services which are considered a custodial level of care.
   d. Waiver of the requirement for a new plan of treatment upon a patient's discharge following reinstitutionalization. Because some hospice patients will be institutionalized to stablize their conditions, the current Medicare requirement that a new plan of treatment be established at each discharge may be waived.
   e. Waiver of the current limits of 100 home health visits allowed under Part A of Medicare. Coverage of in-home hospice services may be expanded under Part A of the Medicare home health benefit with no numerical limits.
   f. Waivers of the Medicare provisions relating to a 3-day prior hospital stay, establishment of a plan of treatment by a physician within 14 days of discharge from a hospital or SNF and treatment for a condition treated in the hospital or SNF.
   g. Waiver of exclusion of reimbursement for bereavement counselling to the family by a nurse or other qualified professional after the death of a hospice patient.
   h. Waiver of restrictions on reimbursement for visits by psychologists, psychiatrists, and other qualified professionals made to the hospice patient and family.
   i. Waiver of restrictions on reimbursement for visits made by the hospice team to hospice patients who have been reinstitutionalized.
   j. Waiver of applicable coinsurance and deductible for hospice services which are approved during the demonstration.
   k. Waiver of the current Medicare cost reimbursement principles for hospice services if respon-

dent proposes and HCFA accepts an alternative reimbursement system (e.g., capitation, prospective rates, etc.)

- l. Waiver of the requirement that a patient must be in need of skilled nursing care, physical therapy, or speech therapy in order to utilize home health benefits.

2) *For inpatient hospice services*

- a. Waiver of current Medicare cost reimbursement principles for service provided by hospitals and skilled nursing facilities (SNF's) if a respondent proposes and HCFA accepts an alternative reimbursement system.
- b. Waiver of the level of care reimbursements which must be satisfied before a patient can receive covered hospital or SNF services.
- c. Waivers of the Medicare requirements for a 3-day prior hospital stay, transfer within 14 days of discharge from a hospital, and treatment for a condition treated in the hospital.
- d. Waiver of the current limits on hospital and SNF days, scope and duration of benefits such that limits on the stay in a hospital-hospice and SNF-hospice will not be applied.
- e. Waiver of deductible and coinsurance for a patient admitted to an institutional hospice.
- f. Waiver of the limitations of the "benefit period" for admission to and coverage of services provided by institutional hospices.

For the above waivers to apply, four other conditions must be met:

- a. Beneficiaries must have a life expectancy of less than 6 months as certified by a physician who has treated the patient or can be shown to have complete knowledge of the patient's medical status.
- b. The hospice home care program must assure that a primary care person is available on an "around the clock" basis. (This can be a family member, friend, or hired help.)
- c. Plans of treatment must be established within 3 days of admission to the home care hospice and within 2 days of admission to the inpatient hospice.
- d. Beneficiaries must give informed consent, in writing, to the hospice plan of treatment.

At the 1980 Annual Meeting, the House of Delegates referred Resolution 40, "Reimbursement for Charges in Voluntary Home Treatment of Terminally Ill," to the Board of Trustees for study. The resolution would have the AMA urge "the government and private health insurance programs to designate as reimbursable all medical charges and costs incurred by individuals electing to remain at home for the period of medical treatment required in the case of a terminal illness, thereby encouraging alternative, less costly treatment settings."

The Council on Medical Service has had the benefit of further comment on this resolution from representatives of its sponsor, the Colorado Medical Society, and has discussed the subject with government officials and representatives of the health insurance industry. The Council believes that the HCFA Waiver project described above, as well as the comparable studies underway in the private health insurance industry, will provide much needed additional information on the actual cost of providing coverage for hospice services, on appropriate criteria for quality and utilization of such services, on the feasibility of providing benefits for such services as bereavement counseling, which are extended to the family rather than the named insured, and on methods for coordinating the multiple levels of care which a given patient in a hospice program may require. Such information is an important prerequisite, in the Council's opinion, to consideration of any broad scale expansion of third-party coverage—particularly to services less directly related to medical care.

The results of these studies should provide a body of actuarial experience on which to develop reasonable payment mechanisms and coverage plans which can best meet the needs of patients who can benefit from hospice care. Pending their completion, the Council believes that a policy advocating blanket extension of third party coverage to *all* medical expenses involved in hospice care at home would be premature.

The Council on Medical Service believes that the concept of hospice care is a complex one, involving as it does multiple levels of medical and supportive care for both the patient and patient's family, but that the potential of such programs for alleviating human suffering and reducing the isolation of the dying patient is immense. The Council intends to monitor development in this area carefully, with particular reference to issues concerning third party coverage, accreditation, quality assessment and coordination of services, the need for closer physician direction and supervision, sources for program administration, and admission and utilization criteria, and will submit further reports to this House of Delegates as appropriate.

The Council recommends that:

1. The following statement be adopted in lieu of Resolution 40 (A-80):
   The American Medical Association strongly supports continuation of studies by private and public third parties in paying for hospice care with the goal of designing coverage for medical charges and costs incurred by individuals electing to remain at home for the period of treatment required in the case of terminal illness, thereby encouraging alternative, less costly treatment settings.
2. The remainder of this report be filed.

# ELMCREST

A COMPREHENSIVE
MENTAL HEALTH TREATMENT CENTER
FOR ADULTS AND ADOLESCENTS

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Allen Cohen,** M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman,** M.D., F.A.P.A.
*Medical Director*
**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY

☐ CRISIS INTERVENTION AND EMERGENCY SERVICES

☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY

☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM

☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION

☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)

☐ GERIATRIC GUIDANCE CENTER

☐ DAY HOSPITAL

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

# AYR INSURANCE AGENCY

ALLENBY H. AYR    ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

# A Physician-Owned Insurance Company for CSMS

## RECOMMENDATION OF THE COUNCIL TO THE HOUSE OF DELEGATES

ABSTRACT—At its April 29, 1981 meeting, the CSMS House of Delegates adopted the recommendation of the Council to accept the proposal of American Health Systems, Inc., to implement and operate a physician-owned professional liability insurance company, under a charter granted by the Connecticut General Assembly in April, and signed by the Governor in May. The House also set provisions to clarify the legal relationships of the parties, to give the CSMS Council authority for negotiating the detailed contract with AHS and any subsequent modifications to it, as well as for termination or deferral of implementation if indicated. After implementation and licensing the new Connecticut Medical Insurance Company would be governed by a Board of Directors already appointed by the House of Delegates. Subsequent Boards would be elected by the insured physicians in accordance with the Company Bylaws. The operations of the Company would be supervised by a nonprofit management company, Medical Management, Inc., which would be a wholly owned subsidary of CSMS, with its first Board of Directors also appointed by the House of Delegates.

American Health Systems, Inc. will be responsible for the costs of implementation of the Company, and its first three to five years of operation, except for costs connected with maintaining physician control over the affairs of the Company such as banking, legal, financial, and actuarial counsel, and directors' expenses.

The Council and the House of Delegates have embarked on this course with the consensus that the physicians of Connecticut can be best served ultimately in cost and in the possible containment of the liability problem, by assuming the risks and benefits afforded by owning and controlling their own malpractice insurance vehicle. This vehicle is to be soundly and conservatively funded and capitalized to meet the standards of the Insurance Department and to assure its long-term viability in protecting our state's physicians and patients.

Once actuarial and other studies now in progress are completed it will be known what the premium rate and capitalization levels must be to meet these standards. If these levels appear sufficiently competitive with the available alternatives, then the new company could attract enough support and enrollment from among our physicians to ensure its viability and success in the marketplace, and the marketing and operational phases of implementation would begin.*

### Background

For the past eighteen months the Committee on Professional Liability has studied alternatives to the professional liability insurance program underwritten by the Aetna. The study was stimulated by the continuing escalation of insurance costs and received new urgency by the Aetna premium increase of over 60% which became effective last October. 1.

During the course of the Committee's deliberations, it became clear that Connecticut physicians would be best served by a liability insurance company which they owned and controlled. Therefore the Committee recommended two courses of action: On their recommendation CSMS sponsored legislation to charter a physician controlled insurance company which is scheduled to be enacted by the state legislature shortly. Secondly, the Committee continued to examine other insurance alternatives which might be open to Connecticut physicians.

CSMS examined the experience of other medical societies which have sponsored the implementation of physician-owned casualty insurance companies. As of January 1, 1981 there were 24 such companies operating in 25 states and the District of Columbia. They insure nearly 45% of United States physicians in private practice. These companies have assets nearing $2,000,000,000 and will have premium writing of well over $500,000,000 in 1981.

---

* Subsequent to the preliminary actuarial indication, the Aetna has notified the society that any rate increase for the coming account year is not likely to exceed 10%. In addition, a second commercial company is now expected to enter the market at rates below current Aetna rates.

In the meantime, Aetna informed CSMS that a preliminary analysis has indicated a rate increase of as much as 50% might be expected next October 1.* In light of this information, your Council believes that the only long term solution to the skyrocketing cost of liability insurance is to organize an insurance company wholly owned by Connecticut physicians and dedicated to their interests.

The indicated Aetna rate increase challenges Connecticut physicians to seize this opportunity to control the future of physicians liability insurance. Based on the extensive work of the Committee on Professional Liability and several Council meetings devoted to the subject, your Council reports the following conclusions to the House and recommends that CSMS proceed immediately to effect implementation of an insurance company, to be ready by August 1 to offer coverage to our physicians effective 10/1/81.

### THE COUNCIL RECOMMENDS THAT CSMS CONTINUE TO SPONSOR OCCURRENCE INSURANCE IN A POLICY FORM SUBSTANTIALLY THE SAME AS AETNA.

Occurrence insurance is clearly the program of choice of Connecticut physicians. Last October Aetna began to offer "Claims Made" insurance in Connecticut. Less than one percent of CSMS physicians opted for this form notwithstanding the lower initial price. Therefore it seems apparent that Connecticut physicians prefer to pay a guaranteed premium to insure against all occurrences of a policy year regardless of when they are reported.

In contrast, Claims Made insurance limits coverage to those events reported during policy periods in which the doctor has been continuously covered from the incident to the date of report. Thus the initial premium is less expensive because the initial coverage is less comprehensive. The physician is obliged to renew continuously with the Claims Made carrier in order to assure coverage for unreported claims incidents. When the physician wishes to terminate insurance (other than retirement, death or disability) he purchases a special endorsement to cover all prior acts, at a price to be determined.

There is no need to resort to Claims Made insurance in Connecticut. Many physician owned companies around the country continue to offer occurrence and the American and international reinsurance companies are actively supporting this market.

### THE COUNCIL RECOMMENDS A PREMIUM SCHEDULE WHICH HAS BEEN DEVELOPED BY INDEPENDENT ACTUARIAL CONSULTANTS.

The premium rates for individual physician professional liability coverage will be based upon risk classifications and limits of coverage similar to those of Aetna. The rates have been developed from Connecticut loss experience by Milliman & Robertson, our actuarial consultants, who are well qualified in physicians liability insurance and serve many other state societies in this capacity. In addition, their conclusions were substantially in agreement with other actuarial studies.

The proposed premiums have been discounted for the future earnings of loss reserves. In the past, the CSMS program was funded as if all claims were to be paid in the current policy year whereas, in fact, the insurance company had investment use of multimillion dollar reserve accounts. Over the years your society negotiated some participation in investment income on a retrospective basis; however, anticipated investment earnings have not been accountably reflected prospectively in the rate development process.

The CSMS proposed rates reflect much lower administrative expenses than those of the Aetna. The CSMS company will be a "direct writer" and pay no commissions to agents and brokers. The CSMS rates need not support the national overhead structure of a large multi-line company. Therefore more of your funds will be available for losses thus ameliorating future rate increases. The rates need not anticipate a profit or dividend payment for shareholders since its single object is to provide quality protection to its physician-owners at the lowest cost consistent with sound insurance practices.

### THE COUNCIL RECOMMENDS A SURPLUS SCHEDULE WHICH WILL ASSURE A STABLE AND SECURE BUSINESS ENTERPRISE.

The proposed insurance company must accumulate sufficient capital and surplus to meet the regulatory requirements of the Insurance Commissioner, to promote confidence among reinsurance partners and, most importantly, to provide protection at a very high level of confidence against unexpected results. The attached surplus scheme meets these objectives in the opinion of consulting actuaries and is consistent with the expectations of reinsurers.

The surplus has been allocated by risk relativity factors among the various specialty classes. These allocation plans are similar to those used by many other

---

* Subsequent to the preliminary actuarial indication, the Aetna has notified the society that any rate increase for the coming account year is not likely to exceed 10%. In addition, a second commerical company is now expected to enter the market at rates below current Aetna rates.

# House of Delegates Accepts Council Recommendation

## PROVISIONS FOR IMPLEMENTATION SPELLED OUT

THE HOUSE OF DELEGATES OF CONNECTICUT STATE MEDICAL SOCIETY ACCEPTS THE AMERICAN HEALTH SYSTEMS PROPOSAL TO IMPLEMENT AND OPERATE A PHYSICIAN-OWNED PROFESSIONAL LIABILITY INSURANCE COMPANY, SUBJECT TO THE FOLLOWING PROVISIONS:

1. Review and Advice of CSMS Counsel
2. Receipt of an opinion letter from AHS Counsel concerning the past and future status of Mr. Dorsett and AHS with respect to the Connecticut statute concerning certified insurance consultants which is satisfactory to CSMS counsel.
3. Indemnification by AHS against any losses resulting from Mr. Dorsett's and AHS'S relationship with CSMS with respect to the same statute.
4. That the detailed final agreement to be negotiated with AHS by the council of CSMS provide for options by the council to terminate or defer implementation, with equitable provision for reimbursement for services and materials rendered to that date.
5. The CSMS council is authorized to negotiate the final detailed agreement, as well as subsequent modifications thereto, until the corporate board of CMIC is operational after licensure.
6. If the Council of CSMS is not able to negotiate a final agreement with AHS, it is authorized to terminate negotiations and the relationship with AHS and seek other options.

state societies and have generated a successful response from their membership.

Prospective members of the proposed insurance company would be obliged to advance their share of the surplus fund according to their specialty classification. In return, the subscribers would receive a subordinated debenture which is a contingent promise to repay the loans when the company is mature and no longer needs the funds. Redemption of the loans requires the approval of the Board of Directors and a finding of the Commissioner of Insurance that they are no longer required for company solvency.

A plan for deferring payment much of the surplus otherwise required will be offered, subject to approval of the Insurance Commissioner. The deferred payment plan will provide two annual installments after an initial payment. Physicians utilizing this plan will execute a Promissory note for the unpaid balance. In this way, CSMS physicians will be able to moderate the cash flow effects of the surplus requirement.

THE COUNCIL RECOMMENDS THAT THE PROPOSED COMPANY BE ORGANIZED IN A WAY TO ASSURE POLICYHOLDER CONTROL OVER POLICY ISSUES AND CSMS CONTROL OVER ADMINISTRATIVE ISSUES.

The proposed company will be organized as a non-stock corporation through a charter of the Connecticut General Assembly. It will be incorporated by CSMS. The specially authorized company will have the characteristics of a mutual insurance company for Federal income tax purposes.

The Company will be governed by a Board of Directors. The initial Board will be appointed by the CSMS House of Delegates. Subsequent Boards of Directors will be elected according to the Company By-Laws which will call for election of the Board by the insured physicians. Voting would be in person or by proxy at the Company's annual meeting which might be scheduled to coincide with the CSMS annual meeting to assure a wide turnout.

The operations of the proposed company would be supervised by a non-profit management company which would be a wholly owned subsidiary of CSMS. The first Board of Directors of the management company would be appointed by the House of Delegates.

If the proposed company is to alter fundamentally the development of medical malpractice insurance in Connecticut, physicians must be involved in a number of responsibilities outside of their normal field of professional activity. In this particular field of insurance a physician-owned carrier can expect to discharge many responsibilities more effectively and with greater benefit to its insureds than a commercial carrier. The blend of insurance and medical considerations should pervade the general underwriting policy of the company, its management of claims, and its conduct of educational and loss prevention programs.

## THE COUNCIL RECOMMENDS A SINGLE CONTRACT BE LET FOR ASSISTANCE IN IMPLEMENTATION AND INITIAL OPERATION OF THE PROPOSED COMPANY.

In order to assure an uninterrupted transition from implementation to early operations, the proposed company will use the services of a professional insurance management firm. That firm will take full responsibility for all implementation steps and the attendant costs of implementation with the exception of costs associated with maintaining policy control over the affairs of the company such as banking, directors expenses and outside legal or actuarial counsel.

With respect to operations, the relationship with the contractor will be guided by the following principles. Policy issues will be vested exclusively with the Board of the company. The managers activities will be governed by operations and procedures manuals promulgated by the Board. All records, information and assets will be the property of the Company and the managers act merely as custodian.

After a minimum term of performance, the Company will have the option to proceed without further reliance on others. The manager will make available all facilities, computer systems and personnel at a Connecticut site on a "turn-key" basis.

The manager will be compensated on a formula which provides profit only if the proposed company is successful. Thus, the incentives of the CSMS, Company and its policy-holders will be directly aligned with the contract manager.

## THE COUNCIL RECOMMENDS URGENT IMPLEMENTATION OF THE PROPOSED COMPANY TO OFFER INSURANCE EFFECTIVE OCTOBER 1, 1981.

The implementation of a professional liability company requires that a series of complex activities be undertaken simultaneously. There are many legal and regulatory issues which have been addressed in principle to date and offer no inherent obstacles; however, they do require detailed development as the implementation proceeds. The insurance code, securities law and corporate law are all involved. The filing of organizational documents, business and financial plans, rates and insurance documents will be made as soon as possible.

Upon receipt of authority from the Insurance Department, solicitation materials will be made available to CSMS physicians. This step must take place by August 1, 1981 to provide sufficient marketing and policy issue time for an orderly replacement of the Aetna policies.

Our proposed implementation team, American Health Systems, Inc., has organized six physician owned insurance companies for the state medical societies of Illinois, New Jersey, Texas, Utah, Minnesota and the District of Columbia. They assure us that the schedule is well tested and the time is adequate to assure an orderly transition.

## THE COUNCIL REPORTS THAT THERE IS MINIMAL FINANCIAL RISK TO CSMS IN THE PROPOSED IMPLEMENTATION AND OPERATION PLAN.

In consideration of a combined implementation and operations contract, the proposed contractor will spread recovery of his implementation expense (estimated to be $500,000) over the whole contract period. The contractor is on direct risk if the solicitation is unsuccessful. CSMS incurs no obligation as a result of implementation other than the expense of its employees and associated overhead and legal, actuarial and accounting consultants. The consultant costs are estimated to be $45,000.

CSMS will not risk any of its assets to support the insurance company after its implementation. Indeed, the company will reimburse CSMS a fee for the use of CSMS staff and facilities which may be used in furtherance of its activities.

Now therefore the Council recommends that the House authorize development of a physician sponsored insurance company in accordance with the "Report on a Physician-Owned Casualty Insurance Company for the Connecticut State Medical Society" which was commissioned by the Council and is summarized in the above recommendations of the Council.

# Month in Washington

The threat of federal intervention against physicians sitting on policy-making boards of Blue Shield or similar medical insurance plans has been lifted by the Federal Trade Commission.

The agency abandoned a two-year-old proposal by the Commission's Bureau of Competition that the FTC issue a rule limiting control physicians or medical societies may have over the 70 Blue Shield boards.

Additional studies have contradicted original staff findings that health care costs were higher in areas where physicians controlled Blue Shield boards, FTC officials said. They also noted that consumer representation has increased on boards in recent years.

The Commission's decision to abandon the industry-wide effort was unanimous and came after less than 50 minutes of debate and without a formal vote.

The Blue Shield proposal was one of a series aimed at health care providers and insurors in recent years and ranked in importance only behind the FTC's action against the AMA's code of ethics involving physician advertising.

Blue Shield plans disputed the FTC's staff allegations that physician reimbursement was higher where physicians exercised significant control over local Blue Shield plans.

Instead of an industry-wide rule on the matter, an action that probably would have been protested in court, the FTC decided to seek any abuse on a case-by-case basis.

The controversial staff report, which received prominent media attention at the time, charged that control by the medical profession of insurance plans is so prevasive that some physicians call Blue Shield "the economic arm of the medical profession."

In a statement on the FTC's action, Walter McNerney, President of Blue Cross-Blue Shield, said the decision "vindicates" the Blue Shield position that the presence of physicians on Blue Shield boards does not produce higher fees. He said the staff recommendation was in part a "complete reversal" of previous findings.

Acting FTC Chairman David Clanton said the new analysis "suggests that some previously suspected relationships do not hold, but the study still shows a troublesome relationship between medical society involvement on Blue Shield boards and fee levels for several expensive medical procedures."

Clanton said the FTC should proceed selectively "using a rule of reason approach" that takes into account the share of the market possessed by a plan, the degree of physician participation in fee setting, and the plan's coverage.

****

The Administration has sent Congress legislation phasing out federal financial support for Health Maintence Organizations (HMOs).

The bill will "help ensure that health maintenance organizations and other modes of health delivery face a fair test in the marketplace," said Richard Schweiker, Secretary of the Health and Human Services (HHS) Department, in a letter of transmittal.

Schweiker said the federal aid has given HMOs "an advantage over other forms of health delivery."

The bill eliminates certain federal restrictions on HMOs "that have inhibited their ability to compete successfully," Schweiker said. The bill authorizes appropriations of $1 million for the next three fiscal years for HMO training and technical assistance and $35 million yearly for the HMO loan fund.

No federal assistance would be provided for starting up any new HMO.

Other provisions of the bill would:

- Remove mental health and substance abuse services from the list of required services and make them optional.
- Repeal current limitations as to HMOs contracting with individual physicians for the provision of health services and clarify what percentage of services could be contracted by an HMO.

Earlier, the AMA had told the Congress that now is the time to end federal aid for HMOs.

"What was envisioned in 1973 as a justifiable manipulation of marketplace forces to foster the development of HMOs now is perceived as undue interference with matters of choice best left to the consumer," the AMA said in a statement to the House Commerce Subcommittee on Health.

The growth of any one form of health care delivery—prepaid plans, fee-for-service, etc.—should not be determined by federal subsidies, by preferential treatment under law, or by federally-financed advertising campaigns, the AMA said. Rather, the decision should be made by popular choice in a free competitive system. "Government neutrality is essential to maintain a pluralistic system for consumer choice."

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

The HMO act has now served its purpose, according to the AMA which has thrown its support to the Administration's plan to withdraw funds for startups of the new HMOs and the termination of funds for other HMOs after completion of the current funding cycle.

The AMA said that experience has shown that the HMO program "has not been entirely successful in developing qualified HMOs and the fact remains that the vast majority of individuals who are enrolled in prepaid group practices—HMOs—are enrolled in plans that did not receive federal assistance."

The AMA pointed out that the HMO loan fund which has provided $128 million to HMOs since 1973 is now in a deficit position because 11 HMOs have gone bankrupt. Another 38 plans are experiencing financial problems, raising the total to more than one-fifth of federally-qualified HMOs that are in trouble.

****

The AMA has backed reauthorization and continued funding for the National Centers for Health Statistics and Health Services Research.

In a statement to the Senate Labor and Human Resources Committee, the AMA said it "has been particularly impressed with the work of the National Center for Health Statistics and the ready cooperation received by medical professionals and medical groups seeking the assistance of Center personnel."

For the most part the National Center for Health Services Research has equally served the private sector, said James Sammons, M.D., AMA Executive Vice President.

The gathering of data on health care services and the research into delivery of medical and other health care are making valuable contributions to those governmental and non-governmental parties who are determined to make informed policy choices. "We urge that these centers continue to receive adequate federal funding."

The AMA also recommended against development of the Cooperative Health Statistics System, saying that the obstacles to the creation of the system and the costs it would entail "militate against its satisfactory completion."

****

The AMA has recommended to the Congress that the National Center for Health Care Technology be eliminated.

Fred C. Rainey, M.D., a member of the AMA's Council on Legislation, told the Senate Labor and Human Resources Committee that the AMA opposed reauthorization of the center "not out of lack of concern for the safety, efficacy, and cost-effectiveness of medical care, but because the relevant clinical policy analysis and judgments are better made, and are being responsibly made, within the medical profession."

Noting that the law creating the center gave the HHS Secretary the authority to regulate the dissemination of medical information, Dr. Rainey said a centralized government authority could not supplant the current system of assessment by researchers, medical school faculties, and physicians and biomedical scientists in public and private institutes, hospitals, and other institutions.

"This is especially so," he said, "when the mandate of such an authority is essentially to facilitate the achievement of economic, not health goals; to make definitive reimbursement recommendations that cannot begin fairly to reflect the complex and changing circumstances that a physician, patient, and a local community must deal with."

Dr. Rainey emphasized the AMA's long history of actively assisting the individual physician in assessing new medical technology and integrating it into medical practice.

He said the AMA was committed to assuring that medical education and practice are rooted on a scientific base, and to raising practitioners' cost-consciousness about all the aspects of medical care. He pointed out that AMA publications played a central role in disseminating medical information.

****

The Food and Drug Administration's pilot program for patient package inserts (PPIs) for drugs has been slowed and may be halted.

New FDA Commissioner Arthur Hayes, M.D., "will conduct a complete review of ways to provide health and safety information to consumers about drugs," said HHS Department Secretary Richard Schweiker. The May 25 and July 2 effective dates of the pilot program will be postponed.

The FDA review will consider alternative means of providing needed information to patients about drugs, the cost effectiveness of the PPI approach, and whether the pilot program is appropriately constructed to produce reliable information on the effectiveness of PPIs.

The program requires inserts for cimetidine, clofibrate, propoxyphene, ampicillin and phenytoin. Current PPIs for oral contraceptives, estrogens and progestins are not affected.

****

An abrupt halt to capitation aid would force medical schools to retrench some of their essential programs, the AMA has told Congress.

Urging the lawmakers to phase-out gradually the federal program of general institutional support, the AMA said this assistance "has served the public interest by aiding and improving the quality and availability of medical education and medical care.

# Address of the President of CSMS

W. RAYMOND JAMES, M.D.

Today marks the end of what for me has been a most interesting, busy and challenging year . . . a year that can best be epitomized as a year of 'change' . . . 'Change' both in the Society and in the nation.

The addition of student and resident sections to the eight county Societies, which have constituted this House of Delegates since its founding, represent the most significant change in the organization since its inception. At our next regular meeting the recruiting and organizing efforts now under way will have resulted in the seating of student and resident delegates with full rights and responsibilities. From this change we can expect challenging and timely activities and a broader physician participation in the future. Our action parallels that of the American Medical Association, whose House of Delegates has been significantly improved by the addition of student and resident sections.

A year ago the Society prepared and forwarded to the AMA suggestions for modifications in the Code of Ethics. Amalgamation of suggestions led to the adoption of a new Code including the most major 'changes' since the exclusion of the prohibition against abortion.

Overshadowing 'changes' in the profession, have been the 'changes' in the national administration. Not in a half-century has a new administration championed such major changes in the philosophy and the role of Government. Society efforts to repeal or change the National Health Planning Act have, in the past, met with progressively less physician and community influence and increasing federal control and regulation. Now, the health planning units are faced with loss of all funding and almost certain extinction. We have probably helped to bring this about, for the AMA has consistently supported funding of health care planning on the state and local level while opposing the National Health Care Planning Act. The death of the HSA's will not leave us without necessary health care planning. Hospitals, public health agencies, physicians and the general public are well aware of the increasingly prohibitive costs of medicine, and all are involved in review of costs as well as the quality of health care. Nevertheless, the radical 'change' requires that we, as physicians and as a society, assume an increased and constructive role in the planning for health care.

The withdrawal of AMA support for PSRO, the only national program in which physicians play a major role, and subsequent presidential plans for rapid withdrawal of federal financial support, leaves us with a vacuum in the area of quality control and utilization review. We have both an opportunity and an obligation to help in developing local mechanisms to encourage appropriate use of health care facilities and third-party payments. It would be ironic if physician opposition to PSRO, which recognized the importance of physician peer review, should result in increased activity of non-physician agencies in quality control and utilization review.

The 'changes' expected from reduced federal funding of welfare programs will present problems in health care for many patients. Developing means of financing programs for low income families that fairly compensate physicians, without overburdening the tax structure, may be the biggest challenge to our state and local governments in the next few years. We must be determined that changes will not result in lessened availability and poorer quality of care for the less privileged members of society.

We should all, by now, be immune to surprise and change, for we live in a world of unbelieveable technological and scientific progress. No sooner do we become familiar with a new drug or new procedure than some complex and effective and potentially harmful new drug or procedure appears. Before the miracle of CT scanning is even generally available, we hear rumors of miraculous new diagnostic methods of even greater complexity. This explosion in scientific and medical knowledge has increased the opportunity for both benefit and harm to patients. The medical profession has responded to this challenge with expanded programs for continuing education, with increased specialization and with greater awareness of the need for competence and quality of care. This latter is not new, for the medical societies have long been champions of improved quality of care. It was through the efforts of our medical societies that the medical schools, hospitals and physicians were first examined, certified and licensed, and it has been through the continued efforts of our Society that quackery and incompetence have been kept at a minimum.

Now we are faced with a new problem, closely related to both social change and the vast expansion of the complexity of modern medical care. This has been the rapid rise in the cost of professional liability insurance. In our state there has been a 17% average increase in instance of professional liability cases for

---

W. RAYMOND JAMES, M.D., was President of the Connecticut State Medical Society in 1980-1981. This address was delivered at the Annual Meeting of the House of Delegates on April 29, 1981.

each of the last ten years. There has been an average of nearly 20% increase each year in cost per claim. We have now reached an instance of 8% malpractice in Connecticut. One Connecticut physician in twelve will face a claim this year. This rate is almost doubled in New York. The frightening thing is that reliable figures show that only 5% of compensible injuries to patients result in claims. The potential for increasing professional liability costs and suits is immense. The recognition of this potential and, most of all, the recognition that patient injuries are the physicians' responsibility and only we, as physicians, can significantly reduce injuries to patients, has undoubtedly been the major factor in the rapid development of captive insurance companies in the United States.

There are now 26 physician-owned liability companies and a half-dozen more, including our own, in the process of formation. Almost 50% of all professional liability insurance in the United States is being written by captive insurance companies. These companies have provided innovative and increasingly effective underwriting and claims management programs and many are in the process of developing extensive risk prevention programs aimed at markedly reducing the number of potentially compensible incidents. Only medical societies and physicians have the expertise to analyze the problems of risk to patients and effectuate a significant reduction in injuries through the pressures of a captive insurance company and the associated risk management programs.

It has been said that we are a debating society which responds to each new crisis with heated words and little else. This certainly has not always been so. In 1810, after years of study, the Connecticut State Medical Society combined with Yale College and its President Timothy Dwight in applying for a charter for a new institute of medicine. Shortly afterwards the Society established the Board of Medical Examiners to determine whether graduates of the new institute were qualified to practice medicine in Connecticut. In time, it became necessary for all physicians in Connecticut to meet the requirements of this Board of Medical Examiners before practicing in the State. More recently, the Society was the major mover in founding Connecticut Blue Cross and shortly thereafter the Society founded, and for ten years controlled, Connecticut Medical Service, now Connecticut Blue Shield. In the same period, the Society was instrumental in developing the first major medical insurance, at first sold only to Society members, but destined to become a major form of health insurance.

Perhaps the pendulum did swing the other way for several decades. If so, it has certainly swung back. Recent deeds, including the addition of student and resident sections to this House of Delegates, the ambitious public relations program, the expansion of the staff and its activities, the involvement with the Connecticut Hospital Association in the volunteer effort to control medical costs, and, most important, the contemplated action in the professional liability field, are all positive actions of a viable and an effective Society. This swing of the pendulum may be the most significant 'change' of the past few years. It bodes well for a future in which the physicians' voice may be better heard. We will need more than words and reaction to crises if we are to effectively manage the competence and discipline of our profession and protect our patients from injury. We will need deeds more than words if we are to point the way to availability of quality health care for the underprivileged. We will need deeds more than debate if we are to help develop means of financing increasingly expensive care for all.

I would like to conclude with a few personal remarks. This has been a year of many enjoyable hours of common endeavor with a host of new friends, and a year of much new experience and knowledge. The many visits to county societies have been profitable and interesting and the welcome has been most gracious. I trust that my efforts at increasing interest in the state and national societies have met with some success. Contacts with neighboring state societies and officers have provided new ideas and new approaches to remarkably similar problems. Attendance at many committee meetings brought, not only great familiarity with buffets at 160 St. Ronan Street, but a healthy respect for the many involved physicians. Particularly noteworthy have been the heroic efforts of Dr. Jack Parrella and his successor Dr. Larry Ahrens and the Committee on Professional Liability, well summarized in the handbook; Dr. Isadore Friedberg, the late Dr. James Tierney and the Committee on Legislation; the quiet effectiveness of Dr. Don Brown and the Committee on Continuing Education as they pursue an extensive accreditation and development program; the importance of Dr. Edward Browne and his strong Committee on Emergency Medical Sevices; and Dr. Norman Zlotsky and the Committee on Sports Medicine, one of the most effective committees on this subject in the country. In these and in other committees and the offices of the staff, the real work is done. Without these we would indeed be only a debating society. A big disappointment has been the lack of time for providing intended support for Dr. Clair Callan and the officers of the Auxiliary as they have endeavored to increase the strengths of this most important arm of the Society.

The opportunity to meet and work with physicians throughout our State, and indeed throughout much of New England, has made this the most enjoyable and memorable year of my life. It has made me even more proud of being a physician and of being a member of this Society. I want to thank you for this honor, for your assistance and support and for the gracious friendship extended to me throughout this year.

Connecticut Medicine
*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
James D. Kenney, *New Haven*
Ramon N. Kranwinkel, *Danbury*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Stewart J. Petrie, *Derby*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*

# EDITORIALS

## The Indentification of Surgical Treatment of Pulmonary Metastasis

Ever since Barney and Churchill reported long term survival following lobectomy for what they thought was primary lung cancer but was histologically metastatic renal cell cancer, surgery has been employed in the treatment of pulmonary metastasis. When cases for resection are properly chosen, the five year disease free salvage is better than one in four. Over the years operations have been advanced from the removal of solitary metastasis to multiple and often bilateral resections and in some sarcomas to a back up position following chemotherapeutic failure.

It is well recognized that most pulmonary metastases are blood borne, dependent for their occurrence on the mitotic activity of the primary, the vascularity of the stroma, and the likelihood of stress and pressures on the primary site. Factors increasing the likelihood of metastasis are lipemia, disseminated intravascular coagulation, growth hormone, fibrin, cortisone, and gelfoam. Lodgement in the lung has been shown by Cliffton to be directly related to embolic bulk.

On the other hand, animal experiments demonstrate that endothelial adherence and consequently metastatic implantation is inhibited by heparin, dicumerol, and fibrinolysin.

Other sources of pulmonary metastasis occur by lymphatic permeation or possibly embolization. A hilar or mediastinal node "blocked" by tumor, granulomas, prior infection or radiation may lead to retrograde tumor propagation through pulmonary lymphatics, subpleural and parabronchial. This would be most likely for lung, esophagus, or breast primary sites. Transdiaphragmatic lymphatics may carry ovarian, colonic, and gastric cancer to pulmonary parenchymal sites.

The first clinical obligation when faced with the possibility of pulmonary metastasis is to establish a correct diagnosis. For instance in a person who has had successful removal of one cancer and then develops an asymptomatic pulmonary coin lesion, the diagnosis may be metastasis, new primary lung cancer, or benign. In 700 such situations, 500 proved to be primary lung cancer, 196 metastatic and only 11 benign. The laws of probability suggest that were the prior cancer oral, pharyngeal, pulmonary, or breast, the lung lesion is most likely a new primary. If it were G.I. or G.U., the chance is 50-50 and in sarcomas of any site or type and in melanoma, the pulmonary lesion is metastatic almost always.

Probability, however, is not diagnosis. Bronchoscopy and sputum cytology are seldom diagnostic in metastases but 75% of primary lung cancers can be diagnosed by cytology, especially localized brushings and washings. The yield in peripheral coin lesions however, is less than 40%.

When a peripheral coin lesion is more than 1.5 cm. in diameter aspiration biopsy with a thin wall needle will carry a histologic accuracy of 85%. Benign and malignant lesions are differentiated by cell morphology, but an acellular aspiration is nondiagnostic, not disproving possible cancer. It is also necessary to note that the finding of adenocarcinoma or epidermoid carcinoma on aspiration does not differentiate between primary and secondary cancer. Thoracotomy is needed to establish the diagnosis.

Before proceeding several points need to be clarified. (1) The primary site must be free of cancer. (2) Extra thoracic metastasis must not be present, and (3) the physiologic risk for thoracotomy needs to be low.

How can the extent of pulmonary involvement be measured? Serial high quality chest x-rays in two dimensions can pick up most pulmonary deposits over 1.5 cm. diameter. Full plane tomography will find more and computerized axial tomography with one second exposure speed can identify deposits as small as 0.5 cm

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

diameter and in locations along the pleura, below the dome of the diaphragm and near the hilus. Not all are cancer; only excisional biopsy can establish the truth.

Gallium scan when the parenchymal lesion and the mediastinum are equally positive suggests mediastinal node metastasis and probably warrant mediastinoscopy. Salvage by surgery is very infrequent when the mediastinum is also involved.

Resection when undertaken is best aimed towards preservation of the most functional lung tissue possible. Few long survivals follow required pneumonectomy, but over one quarter remain alive even after multiple wedges and multiple thoracotomies.

The recent report by McCormick and Martini demonstrates the value of aggressive surgery when the only discernible mestastases are pulmonary. One operation, however, does not free the patient from the risk of additional metastases. Careful, frequent follow-up allows prompt repeat thoracotomy and resection of lesions not appreciable at prior surgery, or in the opposite lung. The five-year salvage rate, disease-free, they report is 25% for carcinoma metastases and 27% for sarcoma. The number of metastases removed, provided total removal was possible, the number of thoracotomies, and the doubling time did not influence survival. It is to be noted that most other reporters have found resections unrewarding when the doubling time is less than 40 days.

When bilateral metastasis is synchronous some surgeons advocate median sternotomy, but I believe strongly that bilateral staged thoracotomy is preferable. The frequency with which unsuspected additional metastases will be found and resected is a function of the thoroughness with which the entire lung can be intimately palpated.

Improved multiagent chemotherapy in testis, breast and colon carcinoma and in osteogenic and rhabdomyosarcomas allows the surgeon to reserve his intervention for drug treatment failure or for residual lung shadows at completion of therapy. Such resections may show viable cancer or maturation to benign osteoma or ganglioneuroma.

Radiation therapy has in general been ineffective in eradicating metastases from the lung, though an occasional report indicates the possibility of success both by external beam and isotopic implantation. Reasons for these successes remain obscure.

The place for the surgeon will certainly shift again. His diagnostic skills will continue to be needed for the all important identification that metastasis is or is not present. At this time his success in eradicating pulmonary manifestations of cancer metastasis not amenable to chemotherapy needs to be remembered by all oncologists and his expertise should not be denied or delayed for patients whose chemotherapy has not been completely successful.

John L. Pool, M.D.
*Associate Clinical Professor, Surgery,*
*Emeritus Yale University School of Medicine;*
*Consultant Surgeon, Memorial Sloan Kettering Cancer Center, New York City*
*Honorary Surgeon, Norwalk Hospital, Norwalk, CT.*

## REFERENCES

1. Barney JD and Churchill ED: Adenocarcinoma of the Kidney With Metastasis to the Lung Cured By Nephrectomy and Lobectomy. *J Urol* 42: 269, 1939
2. Beattie ED Jr: Thoracotomy and Pulmonary Metastasis. *Am T Surg* 27: 294, 1979
3. Beattie EJ Jr, Martini N and Rosen G: The Management of Pulmonary Metastases in Children With Osteogenic Sarcoma With Surgical Resection Combined With Chemotherapy. *Cancer*
4. Cahan WG, Butler F, Watson WL and Pool JL: Multiple Cancers: Primary in the Lung and Other Sites. *J Thor Surg* 20: 335, 1950
5. Cahan WG, Shah JP, and Castro EB: Benign Solitary Lung Lesions in Patients With Cancer. *Ann Surg* 187: 3, 241, 1978
6. Cliffton EE and Agostino D: Cancer Cells in the Blood in Simulated Cancer, Resectable and Unresectable: Effect of Fibrinolysin and Heparin on Growth Potential. *Surgery* 50: 395, 1961
7. Hilaris BS, Martini N, Batata MA and Beattie EJ Jr: Metastatic Intrapulmonary Lesions, Handbook of Interstitial Brachytherapy, Chap. 13: 199-212, 1975. Editor. B.S. Hilaris, M.D., Publishing Science Group
8. Holmes EC, Ramming KP, Eilbur RR and Morton EL: The Surgical Management of Pulmonary Metastases. *Seminars in Oncology* 4: 1, 1977
9. Joseph WL, Morton EL and Adkins PC: Prognostic Significance of Tumor Doubling Time in Evaluating Operability in Pulmonary Metastatic Disease. *J Thoracic Cardiov Surg* 61: 1, 23, 1977
10. McCormack PM and Martini N: The Changing Role of Surgery in Pulmonary Metastases. *Ann Thor Surg* 28: 139, 1979
11. Rifi KE, Bacon B, Michigan J, Hoppe E and Cole WH: Increased Incidence of Pulmonary Metastases After Celiotomy: Counteraction by Heparin. *Arch Surg* 91: 625, 1965
12. Simmon N, Winsberg F, Rotman M, Silverstone SM: Radiotherapy with Moving-Strip Technique For Testicular Tumors Metastatic to the Lungs
13. Turnbull AD, Pool JL, Arthur K and Golbey RB: The Role of Radiotherapy and Chemotherapy in the Surgical Management of Pulmonary Metastases. *Am J Roent* 114: 99, 1972
14. Wilkins EW, Head J and Burke JF: Pulmonary Resection For Metastatic Neoplasms in the Lung. *Am J Surg* 135: 480, 1978

**...takes dietary restriction, regular exercise, behavior modification, and sometimes the addition of an effective anorectic.**

**prescribe**

# Tenuate® Dospan® CIV

**(diethylpropion hydrochloride NF)**

**75 mg. controlled-release tablets**

**the #1 prescribed anorectic**

## An effective short-term adjunct in an indicated weight loss program

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with certain complications. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on this page.

## In uncomplicated obesity

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

## Clinical effectiveness

The anorectic effectiveness of diethylpropion hydrochloride is well documented. No less than 18 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.[1] And the unique chemistry of Tenuate provides "...anorectic potency with minimal overt central nervous system or cardiovascular stimulation."[2] Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate—it makes sense.**
**And it's responsible medicine.**

**Merrell**

## Tenuate® CIV
**(diethylpropion hydrochloride NF)**

## Tenuate Dospan® CIV
**(diethylpropion hydrochloride NF)**
**controlled-release**

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

**INDICATION:** Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below

**CONTRAINDICATIONS:** Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states Patients with a history of drug abuse During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result)

**WARNINGS:** If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence:* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age

**PRECAUTIONS:** Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen Tenuate may decrease the hypotensive effect of guanethidine The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

**ADVERSE REACTIONS:** *Cardiovascular* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System:* Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria

**DOSAGE AND ADMINISTRATION:** Tenuate (diethylpropion hydrochloride) One 25 mg tablet three times daily, one hour before meals, and in midevening if desired to overcome night hunger Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg tablet daily, swallowed whole, in midmorning Tenuate is not recommended for use in children under 12 years of age.

**OVERDOSAGE:** Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage

Product Information as of January, 1980

MERRELL-NATIONAL LABORATORIES Inc
Cayey, Puerto Rico 00633
*Direct Medical Inquiries to:*
MERRELL DOW PHARMACEUTICALS INC.
Subsidiary of The Dow Chemical Company
Cincinnati, Ohio 45215
Licensor of Merrell®

**References:** 1. Citations available on request from Merrell Dow Pharmaceuticals Inc., Cincinnati, Ohio 45215 2 Hoekenga, M T et al: A comprehensive review of diethylpropion hydrochloride In Central Mechanisms of Anorectic Drugs, S Garattini and R Samanin, Ed., New York Raven Press, 1978, pp. 391-404

1-6847 (Y257C) MNQ-594 PRINTED IN U.S A

# The President's Page

## Physicians Get Manipulated

Has this ever happened to you? Imagine the following scenarios.

1. Patient X has been seen for a hernia, allegedly work related. His surgery and convalescence have been uneventful. His return to work, in keeping with 60 years of tradition, is scheduled for 6 weeks following the surgery. He wants an extra week to go hunting, fishing, et al. Have you allowed it?

2. Patient Y is recovering slowly from an acute low back strain. You are almost willing to sign a bank note to get him and his seemingly inane complaints out of your office. He asks for a note suggesting he may return to work on a limited basis but the employer points out he would then be unemployable. At the patient's new request you now indicate he may go back to regular work. The two separate notes are dated the same day.

3. Patient Z, a young, recent mother has no one to tend to her new baby. She solicits and gets statements hinting at continuing medical complications extending her post-partum medical benefits beyond any semblance of honesty. Have you ever seen such a case?

Unfortunately, the three examples cited are but a tiny fraction of the abuses seen virtually daily in the workplaces of our nation. Although American productivity is lagging, we in medicine have become part of the economic problem when we fail to be honest in judging when a person may safely return to gainful employment.

The credo among most employers is that no one should be allowed to work who is ill or at risk; but no one should be allowed to abuse the system by physicians who are willing to be manipulated by dishonest patients. Make no mistake about it, in each large community word gets out as to which of us physicians is willing to overlook the rules of fair play and honesty—ask any large employer or insurance carrier.

Fringe benefits, including health and accident costs, are negotiated items. They are meant to cover those in need. Vacation days are separately negotiated. When physicians do not perform their role as final arbiters of when a person may return to work in a fair and equitable fashion the negotiated items are mixed, costs go up and all of us must pay for the abusers.

Tell patients you consider able to work that you cannot continue excusing them on medical grounds but that you recommend they ask for a leave of absence on their own. American productivity will rise. Costs will decrease. All physicians will be held in greater esteem—even by those who used to manipulate us.

Andrew J. Canzonetti, M.D.  
*President*

# Reflections from the Dean's Office

## Technology Unbound

ROBERT U. MASSEY, M.D.

The technology of modern medicine has become a topic for conversations and conferences almost as popular as death and dying. Since it is certain that we shall not escape either, and that both may let us in for some surprises, their attraction is easy to understand.

Railroad engines and steam ships used to overwhelm us by their great size, their noise, and their appearance of irresistible power. I suspect that watching a lift-off at Cape Canaveral would be like standing close to the tracks when the 20th Century Limited roared by, only multiplied a hundred times. Even so, there are little rockets and toy steam engines, and a child can understand them both. There is something about a steam engine that is clocklike, 18th century, and Newtonian; surely rockets accompanied Handel's *Water Music* when King George's barge floated down the Thames.

A bacterium that makes human insulin is another matter. Speculation about reading the entire genetic code of a congressman or a salamander is unsettling to any but the least sensitive, and we cannot help wondering if we are up to it. But we know that we shall do it, just as Champollion knew that he or someone would read the hieroglyphs on the Rosetta Stone once he saw that there was also a Greek text. It might take some time, but it would be done.

Some of our medical students were discussing medical technology during a seminar on medical history; they were worried, but perhaps not as worried as I thought they should be, that at least some of the technological arts had gone beyond the need for them. One student thought that education would help: if most people were scientifically literate and knew the difference between a meson and an operon, the experts, the hucksters, and the politicians could not mislead them, and they would understand what the scientists were doing. Another believed that science had become a modern religion which somehow implied that all the civilizing values of myth and story were so much rubbish, and that the great mass of people, who knew nothing about science, went along because such a powerful god in a valueless universe seemed as though it might be fun. For them, technology was the whole brave future, just as Huxley had written. A third student said that she was confident that we would manage technology and make it fit our needs. We should decide what needed to be done and devise a technology to do it; the inevitable growth of technology which Hans Jonas ascribed to the technological "laws of motion," was not inevitable, after all. She did not accept that this required more political control, only more discipline.

They had all rested their hope on education, ethical values, and discipline. No one talked about this being the last act in the play as so many of us did in 1945 after that monstrous flash over Trinity Site.

Of course, medicine with its inherent ethical imperatives must believe, sometimes against all the evidence, that technology will retain its place as the servant of those who serve. If, as seems likely, the technology of the new century will rest upon the biological sciences as well as upon the physical (the distinction is artificial), then that connection with medicine may be its saving grace. Our students thought so.

The growth of the commercial hospital industry and the increasing acceptance of commercial practices in the provision of medical services is not a comfort. Talk of marketing and the industrial model, while not excluding professional values, rarely appeals to them. In the end we may have to rely on regulation if education, ethical values, and self-discipline are not mustered for the task.

The free market is the best way to ration most goods and services; if it is the only way which we can devise to control the expansion of the technology which is now coming out of the new biology, then our dark fears may turn out to have been warranted: our technological arts will have become our destiny; they will show, in Bacon's words, their "ambiguous or double uses, and serve as well to promote as to prevent mischief and destruction—."

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## SUMMARY OF PROCEEDINGS
## HOUSE OF DELEGATES—ANNUAL MEETING
### North Haven, Connecticut—April 29, 1981

### Reports and Addresses

The House received reports, addresses and/or remarks from the President, the Secretary, the Treasurer, the Council, Delegates to AMA, Standing Committees, Representatives and Advisors, the President of the Auxiliary to CSMS, Chairman of Board of Directors of COMPAC, the delegates from the medical societies in Massachusetts, New Jersey, Rhode Island and Vermont, and James Todd, M.D., member of the Board of Trustees of the AMA. The address of the outgoing President, W. Raymond James, M.D., appears on page 405 of this issue.

### Election of Officers and Others

With minor amendments, the House voted to approve the published report of the Nominating Committee (the Council). Officers elected were:

President: Andrew J. Canzonetti, M.D., Waterbury
President-Elect: Gioacchino Parrella, M.D., Milford
Vice President: Daniel W. Doctor, M.D., Westport
Secretary: Louis C. Backhus, M.D., Waterbury
Treasurer: John J. Mendillo, M.D., New Haven
Speaker of the House of Delegates: Joseph S. Sadowski, M.D., Hartford
Vice Speaker: Edmund F. Hecklau, M.D., Greenwich
AMA Delegate: Orvan W. Hess, M.D., North Haven
Alternate AMA Delegate: Isadore H. Friedberg, M.D., Newington
Councilor-at-Large: W. Raymond James, M.D., Essex

### Presentations and Awards

**Presentation to Retiring President:** In recognition of his efforts as President of the Society during 1980-81, W. Raymond James, M.D., Essex, received a gift and past President's pin. The presentations were made by Andrew J. Canzonetti, M.D., Waterbury, Chairman of the Council.

**Presentation to Incoming President:** A plaque with a gavel, symbolic of the office of President of the Society, was presented to Andrew J. Canzonetti, M.D., Waterbury, by the retiring President, W. Raymond James, M.D., Essex.

**AMA-ERF Grants to Medical Schools:** Provided by the AMA Education and Research Foundation, unrestricted grants were awarded as follows: To the Yale University School of Medicine—$4,087.79. Accepting for Yale was Mr. Louis Kaplan, Associate Dean; to the UConn School of Medicine—$965.00. Accepting for UConn School of Medicine was Robert U. Massey, M.D., Dean.

### Summary of Actions Taken

All items of business not calling for specific action by the House were accepted directly for filing. Items calling for action to be taken by the House were heard by Reference Committees and based on the reports of the Reference Committee, were acted on as follows:

1. Dues for Medical Students and Postgraduate Physician Members in CSMS: VOTED that dues for medical students be set at $20 per year, of which $15 would be sent to the AMA to pay for membership in that organization and VOTED that dues for postgraduate physician members be set at $40, of which $35 would be sent to the AMA for the same purpose.
2. **Increase in Membership of Committee on Medical Aspects of Sports:**VOTED to increase the membership of the Committee on the Medical Aspects of Sports from fifteen to twenty members.
3. **Computerized Axial Tomography:** VOTED to adopt the following resolution:
   RESOLVED:
   > That the House of Delegates of the Connecticut State Medical Society adopt the following as a statement of its policy:
   >
   > CT scanners for both head and body have a positive impact upon the quality of medical care. Through reduction or elimination of more hazardous diagnostic studies and avoidance of some operative procedures, CT scanning contributes positively to cost containment. Earlier and more precise diagnosis will provide opportunities to modify therapeutic

approaches which may be expected to improve the outcome and/or the quality of life. Ready access to this technology must, therefore, be assured to physicians and their patients.

4. **Nursing Home Bed Shortage:** VOTED to recognize a present critical nursing home bed shortage due to a complexity of regulatory factors and inadequate Medicaid reimbursements and to do everything in its power to work with the involved regulatory agencies to ensure a greater number of skilled nursing and intermediate extended care facilities for the State of Connecticut.
5. **Continuing Medical Education:** VOTED that the CSMS House of Delegates urge the American Medical Association House of Delegates to maintain the provision by the AMA of continuing medical education programs involving direct teacher-student interaction and that the AMA be urged to remain eligible for accreditation as a national organization to offer continuing medical education.
6. **Rehabilitative Services for Title XIX Indigent Children:** VOTED that the concern that the Department of Income Maintenance is denying authorization of medical rehabilitative services for Title XIX indigent children of school age due to confusion with Federal Law 94-142 should be communicated to the Governor, Department of Income Maintenance, CSMS Liaison Committee with the Department of Income Maintenance, State Department of Education, each local Board of Education and to Connecticut's Congressional delegation in Washington, D.C., and that the children be made eligible for Title XIX whenever deemed necessary by a physician.
7. **Physician-Owned Professional Liability Insurance Company:**
   a. VOTED to accept the American Health Systems proposal to implement and operate a physician-owned professional liability insurance company subject to the following provisions:
      1. Review and advice of CSMS counsel.
      2. Receipt of an opinion letter from AHS counsel concerning the past and future status of Mr. Dorsett and AHS with respect to the Connecticut statute concerning certified insurance consultants which is satisfactory to CSMS counsel.
      3. Indemnification by AHS against any losses resulting from Mr. Dorsett's and AHS's relationship with respect to the same statute.
      4. That the detailed final agreement to be negotiated with AHS by the Council of CSMS provide for options by the Council to terminate or defer implementation, with equitable provision for reimbursement for services and materials rendered to that date.
      5. The CSMS Council is authorized to negotiate the final detailed agreement, as well as subsequent modifications thereto, until the corporate board of CMIC is operational after licensure.
      6. If the Council of CSMS is not able to negotiate a final agreement with AHS it is authorized to terminate negotiations and the relationship with AHS and seek other options.

   b. **Managing and Corporate Boards of Directors:** VOTED to ratify the following nominees to the two boards of directors necessary under the American Health Systems proposal.

### CONNECTICUT MEDICAL INSURANCE COMPANY

### Temporary Corporate Board of Directors

Lawrence B. Ahrens, M.D., New Britain
Guy W. Van Syckle, M.D., Danbury
Edward A. Kamens, M.D., Fairfield
John J. Mendillo, M.D., New Haven
Frank Lovallo, M.D., Sharon
Merrill B. Rubinow, M.D., Manchester
Todd E. Anderson, M.D., Torrington
Norman A. Zlotsky, M.D., Rockville
Edmund F. Hecklau, M.D., Greenwich
Frederick C. Barrett, M.D., Norwich
Benjamin M. Shenker, M.D., Middletown
Charles H. Audet, M.D., Waterbury
James Brady, M.D., Hamden
Sultan Ahamed, M.D., Norwich
Donald B. Glugover, M.D., Willimantic
Franklyn P. Ward, M.D., Norwich
Norman Alisberg, M.D.
Lewis A. Dalburg, Jr., M.D., New Britain
J. Alfred Fabro, M.D., Torrington
Boris G. Rifkin, M.D., New Haven
T. Peter Jameson, M.D., Danbury
David S. Fischer, M.D., New Haven
Mehdi S. Eslami, M.D., Waterbury
Michael R. Sharon, M.D., Rockville
Marjorie A. Purnell, M.D., Rockville
Marvin Garrell, M.D., Fairfield
Edward R. Browne, M.D., Willimantic
Robert L. Rackliffe, M.D., New Britain
Jerome K. Freedman, M.D., New Haven
Kenneth I. Bird, Jr., M.D., Durham
Herbert Levine, M.D., Middletown
Kenneth M. Robbins, M.D., Middletown
James A. Clayton, M.D., Cos Cob
Robert R. McDonnell, M.D., New Haven
Roger S. Beck, M.D., Hartford
Gary G. Poupko, M.D., Waterbury

### CONNECTICUT MEDICAL MANAGEMENT, INC.

### Temporary Board of Directors

Andrew J. Canzonetti, M.D., Waterbury
W. Raymond James, M.D., Essex
Mr. Timothy B. Norbeck, New Haven
Kevin V. Dowling, M.D., Hartford
Anthony P. Redmond, M.D., Greenwich
Joseph S. Sadowski, M.D., Hartford
William A. Whalen, Jr., M.D., Willimantic
Gioacchino Parrella, M.D., Milford
Joseph C. Czarsty, M.D., Oakville
Hilliard Spitz, M.D., New London
Daniel W. Doctor, M.D., Westport
Lawrence B. Ahrens, M.D., New Britain.

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### ANESTHESIOLOGY

Anesthesiologist—part time, contract basis. Contact Dr. John Pierce at Newington Children's Hospital, 181 East Cedar Street, Newington, Ct. Telephone 1-203-666-2461, Ext. 376.

### FAMILY PRACTICE

Large adult medical practice now available for immediate sale in New Haven county. Yale-affiliated hospital. Includes offfice and x-ray equipment. Send CV to CSMS/GP-ERH.

For sale—Medical Family Practice. Five exam rooms fully equipped with lab. 2,000 sq. ft. of space. Central CT community location. Contact Mrs. Michael Gualtieri, 55 Forest Ridge Rd., Waterbury, CT 06708.

Opportunity for a young Family Practitioner to take over an active practice on a cost sharing basis. Present Family Practitioner wishes to retire gradually over the next two years. Call 1-203-443-3778.

Solo practice available. Retiring from practice. No charge and equipment free. City located between New Haven and Hartford. Contact CSMS or call 235-0096 after 6:00 P.M.

Well-established family practice of recently deceased physician available. Located in the suburbs of the nation's capital in Arlington, Virginia. Fully equipped office. Please call Mrs. T.A. Moneymaker at (703) 892-5128.

Family practice or internal medicine: Immediate opening for primary care physician to join same in waterfront Connecticut. Community and/or University Hospital teaching opportunities. Subspecialty interests encouraged. Send resume and salary requirements to CSMS FP-IM/JRS.

Excellent opportunity for Family Practitioner. 99% adult medicine. 40 hours per week. Remuneration excellent. Call (203) 646-1900.

### OBSTETRICS AND GYNECOLOGY

OB/GYN: Board certified or eligible to practice with young certified OBS/GYN in northwest CT. Salary followed by partnership. Send curriculum vitae to CSMS/OB-GYN(MRT).

### OPHTHALMOLOGY

Connecticut Ophthalmologist seeks a qualified associate. Please contact CSMS/OPHTH.-SAM.

### ORTHOPEDIC SURGERY

Two Board- certified Orthopedic Surgeons presently engaged in general orthopedics in Waterbury, CT. Interested in adding new member to organization. Write CSMS/Ortho/MOG.

Well established Board-certified Orthopedic Surgeon in Waterbury, Connecticut, is seeking associate. Attractive practice. Excellent opportunity. Send resume to CSMS/Ortho/V.T.

### OTOLARYNGOLOGIST

Excellent opportunity for Board Eligible or Board certified otolaryngologist in a one man otolaryngology practice. First year salary guaranteed, including malpractice insurance. Attractive Connecticut College community with modern hospitals. Modern office with latest equipment. Qualified staff, including x-ray technician, certified audiologist and ENG technician. Write CSMS OTOL/HS.

### PEDIATRICS

Pediatrician needed—Board Eligible/certified, in North-eastern Conn. near U Conn, to join established solo practice. Available now; negotiable. Send CV to CSMS/PED-JSL.

### SCHOOL PHYSICIAN

Part-time school physician to examine students participating in athletics. Set own hours. Contact Ralph E. Hughes, Bullard Haven Tech. School, Bdgt. Tel. No. 579-6129.

### VARIOUS SPECIALTIES

Seeking physicians to locate in the center of Branford. Brand new office available for practice of Ear, Nose & Throat, Dermatology, Ophthalmology, Urology, Orthopedic Surgery. Area in need of these subspecialties. Plenty of parking. Please contact: Robert Aaronson, M.D., P.O. Box 673, Branford, CT 06405.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### ANESTHESIOLOGY

April '81. Age 40. Currently in practice. Nat'l bds. AB-Elig. MD Pahlavi Univ. Med. School. Int: Bridgeport Hosp.; Res. NY Hosp., Cornell Med. Ctr. Interested in solo, group, assoc. or institutional type of practice. Contact CSMS/ANES.(PJ).

### DERMATOLOGY

Sept. '81. Age 34. MD: Univ. of Manitoba, Faculty of Med. Int: Health Sciences Ctr. Nat'l Bds. Certified AB. Presently in practice. Will consider all types of practice except solo. Burrell H. Wolk, M.D., 4277 N. Miller Rd., Scottsdale, AR 85251.

### EMERGENCY MEDICINE

July '81. Age 30. Nat'l bds. MD Dalhousie Univ. Med. School. Int. Dalhousie Univ. Res: Radiology, St. Vincent's Med. Ctr. Interested in part-time ER or Clinic Work in the evenings or weekends. Write: Carl R. Makarequiz, M.D., 165 Alexandria Dr., Stratford, CT 06497.

### FAMILY PRACTICE

Available immediately. Age 29. MD Cornell Univ. Med. Coll. Res: Montefiore Hospital; 3 yr. Family Practice. Nat'l bds, certified AB. Currently in practice. Group, Associate and Institutional practice desired. Background in teaching and administration. Looking for Primary Care full-time position. Allan P. Olivieri, M.D., 123 W. 80 Street, New York, NY 10024.

July '82. Age 27. MD: Case Western Reserve U. Int: No. Carolina Baptist Hospital, Bowman Gray School of Med. Res: North Carolina Baptist Hospital. Passed National Boards. Seeking group or associate practice. Write: Paul D. Harrington, 3826-L Country Club Rd., Winston-Salem, North Carolina 27104.

### INTERNAL MEDICINE

July '81. Age 31. MD: SUNY Downstate. Int. & Res: Boston City Hospital. Nat'l Bds. Certified AB. Group practice. Cardiology. Has extensive training in all invasive and non-invasive procedures. David Flitter, M.D., 113 Maple Ave., Shrewsbury, MA 01545.

### INTERNAL MEDICINE—Continued

May '81. Age 34. MD: SUNY Upstate, Syracuse. Int: Beth Israel Med. Ctr., NYC; Residency, Norwalk Hospital, Norwalk, CT; Lic. CT. Passed National Boards. Certified American Board. Interested in solo, group, institutional or industrial practice. Write CSMS IM/WRS.

June '81. Age 61. MD: NY University. Int: Bellevue Hospital. Res: Hospital of the Rockefeller Institute. Nat'l Bds. AB Eligible. Interested in working as a physician for an insurance company. Institutional practice. Contact CSMS/IM/HFW.

Rheumatology: Aug. '81. Age 30. Nat'l bds., cert.-IM. MD: U. Conn. Int., res. and fellowship: Cleveland Metro Gen. Hosp. Grp., assoc. or institutional practice in CT desired. Would prefer doing mostly Rheu., but willing to do some IM. Robert E. Rzewnicki, M.D., 9807 Clifton Rd., Cleveland, Ohio 44102.

July '81. Age 30. Nat'l bds., elig. Presently in practice. MD: Downstate. Int.: NJ Coll. of Med. and Dentistry. Res.: St. Joseph's Hosp. and Med. Ctr., NJ. Any size grp., from a sm. grp. of IM to large multispecialty grp. considered. David C. Sobel, M.D., 225 Clark Dr., Orwigsburg, PA 17961.

Endocrinology and Metabolism: July '81. Age 30. Conn. license. FLEX. AB-cert-IM; elig.-End. and Metab. MD: Univ. of Western Australia. Int: Hunt Hosp., Lower Hutt. Res.: Auckland Hosp., both in New Zealand. Fellowship: U. Conn. Health Ctr., and Bristol Hosp., CT. Grp. or assoc. practice desired, but will consider other alternatives. Contact CSMS/IM-End.-Metab.-TPS.

July '81. Age 37. Conn. license. Am. Bd.-elig. MD: Univ of Buenos Aires. Int.: Ramos Mejia Hosp., Buenos Aires and Griffin Hosp., CT. Res.: Griffin Hosp. Grp., assoc. or institutional practice in med. community. Maria S.P. Wozniak, M.D., 166 Scott Rd., Prospect, CT 06712.

Sept. '81. Age 28. Conn. license. Nat'l bds., elig. MD: Jefferson Med. Coll., PA. Int: Norwalk Hosp., CT. Res.: Baystate Med. Ctr., MA. Fellowship: U Conn. and National Health Services Corps, USPHS. Solo, grp. or assoc. practice in med. or sm. community. Main concern is to have good hosp. facilities nearby. Bernard F. Oddi, M.D., 171 Hilltop Rd., Plainville, CT 06062.

July '81. Flexible. Age 28. Conn. license. Nat'l bds., elig. MD: Int. and res.: U. Conn. Presently in practice in ER. Solo, grp. or assoc. practice in Eastern CT or Hartford area, but will consider other locations. Contact CSMS/IM-CCP.

July '81. Age 31. Conn. license. FLEX. AB-elig. MD: India. Int. and res.: Griffin Hosp. Derby, CT. Grp., assoc. or institutional practice desired in CT. Prakash N. Puranik, M.D., 42 Peiper Dr., Wallingford, CT. 06492.

Gastroenterology: July '81. Age 33. FLEX. AB-elig. MD: Univ. of Bologna, Italy. Int., res. and fellowship: Long Island Coll. Hosp., NY. Grp. or assoc. practice in med. community. Skilled in all endoscopic procedures including ERCP, PTC, polypectomy, hyperalimentation; interested in therapeutic endoscopy. George J. Rezk, M.D., 7713 Fort Hamilton Parkway, Brooklyn, NY 11228.

July 1, '81. MD: Baroda Medical College, India. Int.: Long Island Jewish Hillside Medical Ctr. Res: Methodist Hospital, Brooklyn. 'Passed FLEX. AB-Eligible. Interested in solo, group or associate practice. Write CSMS/IM/LJR.

### NEUROLOGY

Sept. '81. MD: Med. Sch., U. of Poznan, Poland. Int. & Res: U. Hospitals, Poznan. Fellowship: Western Reserve U., Cleveland; Emory U., Atlanta, GA. Res. in Neurology and Physical Med: McGill U., Montreal. Elig. Amer. Bd. Pref. mixed type of practice, partly institutional, partly private practice in physical med. & rehab, in neurology or both, including electromyography. Write CSMS N/BEK.

### NEUROLOGY—Continued

Aug 1, '81. Age 31. MD: College of Phys. & Surgeons. Int: Beth Israel Hospital, NY. Res: Albert Einstein, NY. Fellowship: Neurological Institute, NY. NB and Elig. for AB. Will consider solo, group, associate or institutional practice. Experience in EMG, EEG, VER and would like to incorporate them into my practice. Write: Walter L. Nieves, M.D., 57 Elmwood Place, Short Hills, NJ 07078.

### OBSTETRICS AND GYNECOLOGY

Sept. '81. Age 52. Currently in practice. AB-cert. MD National Univ. of Ireland. Int: St. Elizabeth's Hosp., NJ. Res. Hospital of St. Raphael. Interested in Institutional and Industrial/Insurance practice. Contact CSMS/OB-GYN (FJH).

Flexible. Age 30. MD State Univ. of NY. Res: Long Island Jewish-Hillside Med. Ctr. Nat'l bds. AB-elig. Prefers group or assoc. practice in Southern Conn. or shore area. Write CSMS/OB-GYN (DAZ).

July '81. Age 31. MD: Lady Hardinge, New Delhi, India. Int: U. of Delhi Hospital. Res: New York Infirmary Hospital (3 years). Eligible AB. Seeking solo, group or associate practice. Contact M.B. Agrawal, M.D., 318 E. 15th St., Apt. 6A, New York 10003.

### OTOLARYNGOLOGY

July '81. Age 31. MD Andhra Med. Coll., India; Int. and Res. New Britain Gen. Hosp. Eligible AB. Solo, group or Assoc. practice. CSMS/OTO—RVD.

### PEDIATRICS

June '81. Age 31. Currently in practice. Nat'l bds. AB-cert. MD G.S. Medical College, Bombay. Int: K.E.M. Hospital, Bombay. Res. Kings County Hosp., NY. Fellowship: New York Hosp./Cornell Med. Ctr. & Mem. Hosp./Sloan-Kettering Research Inst. Pediatric Hematology/Oncology. Solo practice. Write Dipak S. Banker, M.D., 111-22 66th Ave., 1A, Forest Hills, NY 11375.

July '81. Age 29. MD: Sydney U., Sydney, Australia. Int: Jacobi-Einstein, Bronx, NY. Res: Misericordia Hosp., NY. Passed National Board. Eligible, American Boards. Interested in group, associate or institutional practice. Write: Evelyn Rosemarin, M.D., P.O. Box 553 WCMC, Valhalla, NY 10595.

### PSYCHIATRY

July '81. Age 70. MD: U. of Barcelona, Spain. Int. and Res: U. of Barcelona. Passed Nat'l Boards; Certified Amer. Bds. Seeking group, associate or institutional practice. Write CSMS PSY/FM

### RADIOLOGY

Nuclear Medicine: Available July 1, '81. Age 29. Passed Nat'l bds., eligible AM. MD: U. of Pittsburgh. Int.: Presbyterian U. Hospital, Pittsburgh. Res.: Allegheny General Hospital, Pittsburgh. Fellowship: Nuclear Medicine, Emory U. Hospital, Atlanta, GA. Experience in all aspects of Nuclear Medicine—imaging, nuclear cardiology, RIA, etc. ABNM, ABIM-eligible. Write Margaret M. LaManna, M.D., 902 Oakdale Road, N.E., Atlanta, GA 30307.

### SURGERY

July '81. Age 30. Nat'l bds., cert. SUNY-Stony Brook. Int.: UCLA Medical Center, Res.: UCLA Medical Center, General & Vascular Surgery. Desires group or associate practice. Large or medium community. Brian J. Acker, M.D., 575 S. Barrington Ave., #102, Los Angeles, CA 90049.

Sept. '81. Age 35. Nat'l bds., cert. General, Vascular and Hand Surgery. MD: Columbia College of P&S. Int. and res.: St. Luke's Hospital. Solo, group or associate practice. Warren Booth Burrows, M.D., 1142 Canterbury Sq., Indianapolis, IN 46260.

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE*, 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE*. The *JOURNAL* does not hold itself responsible for statements made by any contributor.

REPRINTS are available at an established schedule of costs. A reprint rate and order form is sent to the author with his page proofs.

ALTHOUGH all advertising material accepted is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to: *CONNECTICUT MEDICINE*, 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

*CONNECTICUT MEDICINE* is the official publication of the Connecticut State Medical Society, a voluntary non-profit association organized for scientific and educational purposes, published monthly for members of the Connecticut State Medical Society.

## A Request for Change of Address

Notification of address change should be sent at least six weeks in advance, include both old and new address, and a mailing label taken from the most recent copy. Include your new ZIP Code number. Duplicate copies cannot be sent to replace those undelivered through failure to send advance notice.

CONNECTICUT MEDICINE
160 St. Ronan Street
New Haven, CT 06511

**THERE'S A HEALTHY PROFIT GOING DOWN THE DRAIN.**

If you're not recovering precious silver from fixer solutions, x-ray film or flake, you are losing money. Wallingford Smelting & Refining Co. can show you how to obtain profits from these valuable commodities. And it may cost you absolutely nothing. Let us explain how our electronic systems work to help you increase profits through silver recovery. Call toll free today or write:

**WALLINGFORD**
SMELTING & REFINING CO.
Division of Jeneric Industries, Inc.
125 North Plains Industrial Road,
P.O. Box 724, Wallingford, CT 06492
**Toll Free (800) 243-3969.**
**In Connecticut Call Collect (203) 265-7397.**
**Telex: 643254 Jeneric WFOD**

# CLASSIFIED

WANTED: CONNECTICUT: Career Emergency Physician to join full-time group. Emergency Department cares for 32,000 patients yearly. Has paramedic program in seashore community of 53,000 people. Please send CV to Chairman, Department of Emergency Medicine, Milford Hospital, 2047 Bridgeport Avenue, Milford, CT 06460.

MEDICAL OPHTHALMOLOGY: 43-year-old American Board Certified desires satisfactory position in established practice. Will consider all locations. Curriculum Vitae on request. Reply: ADB, c/o *Connecticut Medicine*, 160 St. Ronan St., New Haven, CT 06511

PORTLAND PROFESSIONAL Center—595Main St., Portland Conn., 5,000 sq. ft. prime space available, will divide to suit. Modern building, elevator, ample parking, easily accessible from major routes, minutes away from Middlesex Hospital. Tenants presently include G.P., cardio-vascular, surgical group, radiology, clinical lab., dentist. Inquiries invited. Edward J. Peters, Jr., (203)342-3535.

FOR RENT: Medical office, 100 Retreat Avenue, Hartford, Conn., 575 square feet, close proximity Hartford Hospital. Inquire 549-1900.

CYTOLOGIST, RECENT Russian emigre, not yet licensed, seeks position as Cytology technician. Dr. Sophia Bass, c/o Golub, 179 West Rock Ave., New Haven, Ct 06515.

7 145

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 JULY 1981 NUMBER 7

HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

IG 3 '81

EC'D

## scientific:

*M.L. Landry and G.D. Hsiung* 417 The Virus Diagnostic Laboratory: Its Function in a VA Medical Center
*Michael T. Kovalchik, III* 423 Sulfinpyrazone Induced Uric Acid Urolithiasis with Acute Renal Failure
*Teodoro Saieh, Massoud A. Marjani and Edward Dunn* 425 The Treatment of Aneurysm of the Common Carotid Artery by Resection and Vein Graft
*Thomas S. Renshaw, James M. Cary and James R. Gage* 427 An Update: Detection of Congenital Dysplasia of the Hip
*Michael A. Dean* 432 Dual Biliary Enteric Fistulas

## special articles:

*atharine Hawley Martin, M. Joan Green and Julianne D. Minear* 437 Women Psychiatrists in Connecticut
*Bernard S. Siegel and Barbara H. Siegel* 441 Holistic Medicine

*Hospital Viewpoint*

*A.H. Lenne Klopfer* 443 Improving Quality Assurance in Hospitals

*Consensus Development Summaries*

*National Institutes of Health* 445 Endoscopy in Upper GI Bleeding
*University of Connecticut* 449 Medical Students' Abstracts
*Louis P. Bertonazzi* 454 Brain Death: A Political Process
*The Citation* 456 Current Medicolegal Issues
*AMA Council on Medical Service* 458 Use of Phrase "Usual, Customary and Reasonable" by Health Insurance Carriers
*AMA Board of Trustees* 459 Confidentiality of Occupational Medical Records
*American Medical Association* 461 Month in Washington

## editorials:

*Robert L. Volle* 469 Research by Medical Students
*Raymond Yesner* 470 The Effect of Tobacco Smoke on the Non-Smoker

## departments:

*The President's Page*

*Andrew J. Canzonetti* 463 Can We Play the Role?

*Reflections from the Dean's Office*

*Robert U. Massey* 465 The New Economics and the Future

*Law, Medicine and Public Policy*

*Joseph M. Healey* 467 Abortion 1981: The Search for Perspective

*Letters to the Editor*

*Gregory S. Slater* 473 Malpractice Rates Out of Control
*Jonathan B. Stolzenberg* 473 Study of Cancer in Children
*Timothy B. Norbeck* 475 Minutes of Council

## general:

471 Book Review
477 In Memoriam
478 New Members
481 Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Feelings vs.

*Some people feel that I am misused and overused and that I'm prescribed too often and for too many kinds of problems.*

The FACT is that approximately eight million people, or about 5 percent of the U.S. adult population, will use me during the current year. By contrast, the national health examination survey (1971-1975) found that 25 percent of the U.S. adult population experiences moderate to severe psychological distress. Additionally, studies of patient attitudes revealed that most patients have realistic views regarding the limitations of tranquilizers and a strong conservatism about their use, as evidenced by a general tendency to *de*crease intake over time. Finally, a six-year, large-scale, carefully conducted national survey showed that the great majority of physicians appropriately prescribe tranquilizers.

*Some people feel that patients being treated with anxiolytic drugs are "weak," can't tolerate the anxieties of normal daily living, and should be able to resolve their problems on their own without the help of medication.*

The FACT is that while most people can withstand normal, everyday anxieties, some people experience excessive and persistent levels of anxiety due to personal or clinical problems. An extensive national survey concluded that Americans who do use tranquilizers have substantial

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 JULY 1981 NUMBER 7

HEALTH SCIENCES LIBRARY
UNIVERSITY

AUG 3 '81

REC'D

## scientific:

*M.L. Landry and G.D. Hsiung* 417 The Virus Diagnostic Laboratory: Its Function in a VA Medical Center
*Michael T. Kovalchik, III* 423 Sulfinpyrazone Induced Uric Acid Urolithiasis with Acute Renal Failure
*Teodoro Saieh, Massoud A. Marjani and Edward Dunn* 425 The Treatment of Aneurysm of the Common Carotid Artery by Resection and Vein Graft
*Thomas S. Renshaw, James M. Cary and James R. Gage* 427 An Update: Detection of Congenital Dysplasia of the Hip
*Michael A. Dean* 432 Dual Biliary Enteric Fistulas

## special articles:

*Katharine Hawley Martin, M. Joan Green and Julianne D. Minear* 437 Women Psychiatrists in Connecticut
*Bernard S. Siegel and Barbara H. Siegel* 441 Holistic Medicine
*Hospital Viewpoint*
*A.H. Lenne Klopfer* 443 Improving Quality Assurance in Hospitals
*Consensus Development Summaries*
*National Institutes of Health* 445 Endoscopy in Upper GI Bleeding
*University of Connecticut* 449 Medical Students' Abstracts
*Louis P. Bertonazzi* 454 Brain Death: A Political Process
*The Citation* 456 Current Medicolegal Issues
*AMA Council on Medical Service* 458 Use of Phrase "Usual, Customary and Reasonable" by Health Insurance Carriers
*AMA Board of Trustees* 459 Confidentiality of Occupational Medical Records
*American Medical Association* 461 Month in Washington

## editorials:

*Robert L. Volle* 469 Research by Medical Students
*Raymond Yesner* 470 The Effect of Tobacco Smoke on the Non-Smoker

## departments:

*The President's Page*
*Andrew J. Canzonetti* 463 Can We Play the Role?
*Reflections from the Dean's Office*
*Robert U. Massey* 465 The New Economics and the Future
*Law, Medicine and Public Policy*
*Joseph M. Healey* 467 Abortion 1981: The Search for Perspective
*Letters to the Editor*
*Gregory S. Slater* 473 Malpractice Rates Out of Control
*Jonathan B. Stolzenberg* 473 Study of Cancer in Children
*Timothy B. Norbeck* 475 Minutes of Council

## general:

471 Book Review
477 In Memoriam
478 New Members
481 Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

---

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 AUGUST 1981 NUMBER 8

## Special Issue: Women in Medicine

*Clair M. Callan, Guest Editor*

*M. Therese Southgate* 483 A Summer's Reading: Virginia Woolf and Her Granddaughters
*Rebecca Z. Solomon* 487 A Woman Psychiatrist's View of the Challenges of Professional and Family Responsibilities
*Clair M. Callan* 491 A Leader in Psychiatry—Carol Nadelson, M.D.
*Vivian Harlin* 493 The American Medical Women's Association and Today's Practicing Woman Physician
*Clair M. Callan and Eve Klipstein* 494 Women Physicians in Connecticut: A Survey
*Barbara Edelstein* 496 Changing Teenage Eating Behavior
*Esther D. Rothblum* 501 Depression Among Women in Medicine
*K.D. Codish* 503 The Office for Women in Medicine at Yale
*Clair M. Callan* 504 The Second Regional Conference on Women in Medicine

## scientific:

*Jerome A. Silbert, Joseph R. Bove, Stuart Dubin and W. Steven Bush* 507 Patterns of Frozen Plasma Use
*Michael Redler, Paul Lakin, Robert Lapkin and Charles Graeber* 511 Reversal of the Uremic Syndrome with Percutaneous Transluminal Angioplasty
*Akella Sarma, Harry Saranchak, Elcon D. Levinson and Robert Sigman* 513 Thrombosis of the Axillary Artery and Brachial Plexus Injury Secondary to Shoulder Dislocation
*Arnold A. Heiger* 515 Complacent Infantile Starvation

## special articles:

*Hospital Viewpoint*

*Malcolm D. Crawford* 517 The Fiscal Impact of Hospital Regulation
*James S. Todd* 518 Interesting Times
*The Citation* 523 Current Medicolegal Issues
*American Medical Association* 529 Month in Washington

## editorials:

*Clair M. Callan* 535 Women in Medicine
*Joseph B. Warshaw* 535 Ethics, the Press and Yale
*Stephen Fleck* 536 The Family—Present, Past and Future

## departments:

*Reflections from the Dean's Office*

*Robert U. Massey* 531 The Market Is Down

*Law, Medicine and Public Policy*

*Joseph M. Healey* 533 Health Planning and Anti-Trust Law
*Timothy B. Norbeck* 539 Minutes of Council

## general:

525 Annual Reports—Connecticut State Medical Society
537 In Memoriam
537 Special Notices
542 Physician Placement Service

**Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society**

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 SEPTEMBER 1981 NUMBER 9

UNIVERSITY OF MARYLAND
BALTIMORE
P 28 '81
REC'D
NOT TO CIRC

## scientific:

*Richard S. Stahl* 545 Primary Retroperitoneal Tumors: Presentation, Investigation, Management

*Harold R. Kay* 547 Acute Management of Cardiothoracic Trauma

*Ronald N. Rubin* 551 The Use of Thrombolytic Therapy in Venous Thromboembolic Disease

*Ronald Tung, William B. White and James R. McCormick* 555 Multiple Myeloma and Adenocarcinoma of the Lung

*Alan J. Wabrek* 559 Nocturnal Penile Tumescence (NPT)

*Epitomes of Progress* 563 Important Advances in Clinical Medicine—Radiology

## Sports for the Handicapped: *Thomas G. Flynn, M.D., Guest Editor*

*Alfred Healy* 571 Role of Primary Care Physician in Sports for the Handicapped

*Gabriella Molnar* 574 Rehabilitative Benefits of Sports for the Handicapped

*Walter F. Ersing* 578 Physical Education and the Handicapped

## special articles:

*Douglas A. Sargent* 583 Work in Progress: Preventing Suicide Among Physicians and Other Members of the Health-Care Team

*Hospital Viewpoint*

*Joseph S. Coatsworth* 587 Report from the Assembly (First of Two Parts)

*Vincent A. Maressa* 589 Medical Staff Privileges and the Law: A New Jersey Perspective

*John Ingram Walker* 593 Coping with the Stress of Medical Practice

*Sheila Taub* 597 Brain Death: A Reevaluation of the Harvard Criteria

*The Citation* 601 Current Medicolegal Issues

*American Medical Association* 603 Month in Washington

## editorials:

*Thomas G. Flynn* 611 Sports for the Handicapped

*Hans H. Neumann* 612 Those "Newer" Sexually Transmitted Diseases

## departments:

*The President's Page*

*Andrew J. Canzonetti* 605 United We Stand—Etc.

*Reflections from the Dean's Office*

*Robert U. Massey* 607 Thumbs Up, Thumbs Down

*Law, Medicine and Public Policy*

*Joseph M. Healey* 609 The Future of Comprehensive Health Planning

## general:

614 Special Notices

615 Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

---

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 OCTOBER 1981 NUMBER 10

UNIVERSITY OF MARYLAND
BALTIMORE

NOV 4 '81

## Special Issue: Symposium on Sports Medicine

*Harry R. Gossling and John P. Fulkerson, Guest Editors*

### scientific:

*Harry R. Gossling and John R. Fulkerson* 619 The University Sports Medicine Program

*David N. Camaione and Stephen T. Sinatra* 620 Beneficial Effects of Exercise and Current Concepts in Adult Fitness

*Norman A. Zlotsky* 625 Secondary School Sportsmedicine

*Herbert H. Scherzer* 628 Aerobic Muscular Exercise: Applications in Clinical Medicine for Diagnosis and Therapy

*Walter R. Hampton* 633 Hypothermia in Winter and High Altitude Sports

*Richard J. Mangi and Peter Jokl* 637 Drugs and Sport

*John P. Fulkerson* 642 Arthroscopic Knee Surgery in Athletes

### special articles:

*Fred Fabro* 645 An Interview with Senator Gerald Labriola, M.D.

*Hospital Viewpoint*

*Joseph S. Coatsworth* 647 Report from the Assembly (Second of Two Parts)

*Consensus Development Summaries*

*National Institutes of Health* 649 Coronary Artery Bypass Surgery

*Deena Weinstein* 655 Scientific Fraud and Scientific Ethics

*Senator Louis P. Bertonazzi* 659 Legislative Inertia on Nontreatment Legislation

*Center for Disease Control* 663 Hysterectomy in Women Aged 15-44, United States, 1970-1978

*American Medical Association* 665 Month in Washington

### editorials:

*Harry R. Gossling and John P. Fulkerson* 673 Connecticut Medicine Symposium on Sports Medicine

*Benjamin M. Shenker* 673 Students' Examinations by the School Physician

*Ira S. Goldenberg* 674 Breast Cancer Question—and Answers?

### departments:

*The President's Page*

*Andrew J. Canzonetti* 669 Gratitude

*Reflections from the Dean's Office*

*Robert U. Massey* 671 Shall It Be Caveat Infirmus?

*Letters to the Editor*

*Stewart J. Petrie* 677 A Newcomer's View of the AMA Process

*Robert M. Daly* 677 The Future of the Connecticut State Psychiatric Hospital

*Daniel W. Campbell, Jr.* 678 The Vietnam Veteran

*Timothy B. Norbeck* 679 Minutes of Council

### general:

681 In Memoriam

683 Physician Placement Service

**Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society**

---

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 NOVEMBER 1981 NUMBER 11

HEALTH SCIENCES LIBRARY
BALTIMORE
DEC 3 '81
NOT TO CIRC.

## scientific:

*Richard S. Stahl, James L. Skydell and Barbara K. Kinder* 687 Transpericardial Stab Wound of the Hepatic Veins Giving Rise to Cardiac Tamponade
*Franklin C. Wagner, Jr., Bahram Chehrazi and William B. Stewart* 690 A Report of the Acute Spinal Cord Injury Center
*Michael L. D'Aiuto* 695 Progress in Burn Management: Retrospective Look
*Peter A. Triolo and Robert D. Russo, Jr.* 699 CT Diagnosis of Infected Prosthetic Graft Sites
*Epitomes of Progress* 701 Important Advances in Clinical Medicine—Obstetrics and Gynecology

## special articles:

*John R. Hayes* 707 The Microcomputer in Medical Practice
*Hans H. Neumann* 713 Hepatitis A, B and N: Some Practical Aspects
*Robert E. Field and Raymond J. Romanus* 717 A Decerebrate Patient: Eighteen Years of Care

*Commentaries*

*Joseph M. Healey* 719 Legal Perspectives
*John J. Paris* 720 The Six-Million-Dollar Woman
*Samuel R. Sherman* 721 The AMA Opinion
*Ronald E. Cranford* 722 Ethical Viewpoint of a Neurologist
*Los Angeles County Medical Association and County Bar Association* 723 Guidelines for Discontinuance of Life-Support Systems
*Rev. James J. McCartney* 725 The Development of the Doctrine of Ordinary and Extraordinary Means of Preserving Life
*Mindy G. Wolman* 731 Discontinuing Treatment for the Terminally Ill: Ethical Considerations

*Hospital Viewpoint*

*Dennis P. May* 733 Reforming the State Hospital Commission

*Consensus Development Summaries*

*National Institutes of Health* 735 CEA as a Cancer Marker
*The Citation* 739 Current Medicolegal Issues
*American Medical Association* 741 Month in Washington

## editorials:

*Solomon S. Schwartz* 743 Measure for Measure
*Merrill B. Rubinow* 743 Divide and Conquer (Malpractice)
*Fred Fabro* 744 Chronic Vegetative State

## departments:

*Reflections from the Dean's Office*

*Robert U. Massey* 747 Controlling the *Summum Bonum?*

*Law, Medicine and Public Policy*

*Joseph M. Healey* 749 The Rights of Minors and the Rights of Parents Revisited I

*Letters to the Editor*

*Richmond C. Hubbard* 746 Does the Department of Income Maintenance Discriminate Against Private Practice?
750 Physician Placement Service

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 45 DECEMBER 1981 NUMBER 12

HEALTH SCIENCES LIBRARY
BALTIMORE

JAN 5 '82

NOT TO CIRC.

## scientific:

*Gregory J. Palermo and Joseph R. Bove* 753 Leukocyte-Poor Red Blood Cells (Washed) Prevent Transfusion Reactions

*Yung H. Son and Daniel S. Kapp* 755 Esophago-Pulmonary Toxicity from Concomitant Use of Adriamycin and Irradiation

*Philip J. Schroeder* 759 Results of Carotid Artery Surgery for Cerebral Vascular Insufficiency

*I. Willard Abrahams* 761 Endogenous Uveitis: A Multispecialty Problem

*George C. Roush* 767 Unusual Chromosomal Translocation, t(1p+, 7q−), and Familial Leukemia

*Ludmil A. Chotkowski, Sabri I. Bilsel and Jack D. Maleh* 773 Influenza Vaccine Effectiveness: Two Epidemiological Studies, 1980-81 Outbreak

*Benjamin D. Gordon and George J. Terranova* 775 Heimlich Maneuver in Cold-Water Drowning

## special articles:

*Mark S. Frankel* 777 Center for the Study of Ethics in the Professions

*Centers for Disease Control* 779 Pneumococcal Polysaccharide Vaccine

*AMA Council on Medical Education* 783 Current Status of Continuing Medical Education

*The Citation* 793 Current Medicolegal Issues

*American Medical Association* 795 Month in Washington

## editorials:

*Merrill B. Rubinow* 803 Two Years Before the Mast

## departments:

*Reflections from the Dean's Office*

*Robert U. Massey* 801 The Best of Times

*Timothy B. Norbeck* 806 Minutes of Council

## general:

797 Committee Service Questionnaire

799 Study Reveals Multiple Interpretations of Phrases Commonly Used by Doctors

808 In Memoriam

809 Physician Placement Service

813 Yearly Index

Owned, Published and Copyrighted, ©1981 by the Connecticut State Medical Society

---

CONNECTICUT MEDICINE (ISSN 0010-6178), published monthly at 160 St. Ronan St., New Haven, CT 06511
Subscription rate included in membership dues. Non-members: $15 per year. Second-class postage paid at New Haven, CT
POSTMASTER: Send address changes to 160 St. Ronan St., New Haven, CT 06511

# The Virus Diagnostic Laboratory: Its Function in a VA Medical Center

M. L. LANDRY, M.D. AND G. D. HSIUNG, PH.D

**ABSTRACT—Over the years, there have been many changes in the field of diagnostic virology. Interest in different virus groups has fluctuated tremendously; there have been significant technological advances, and recently, some success in the development of effective antiviral therapy. However, viral diagnostic facilities are still not readily available to most physicians. In this paper, some recent developments in diagnostic virology are discussed and the experience at the virology laboratory at the VA Medical Center in West Haven is reviewed. It is apparent that a diagnostic virology laboratory can now be operated on a modest scale, tailored to the needs of the patients it serves, and can provide useful information for patient care and management.**

## Introduction

At the time of the last review of the subject in this journal some twenty years ago, diagnostic virology was still in its infancy.[1] During the past two decades, laboratory diagnosis of viral diseases has made considerable progress, yet most virus diagnostic laboratories still exist only as part of either state health departments or university research laboratories, and are not readily accessible to most physicians. Due to the lack of both convenient facilities for laboratory diagnosis and specific therapy for viral diseases, the average health professional remains unfamiliar with viral diagnostic methods, including the proper collection of specimens for viral culture. With the recognition of herpesviruses as an important cause of sexually transmitted disease[2] and the development of effective drugs for the treatment of herpes simplex keratitis and encephalitis,[3] the attitudes of physicians towards diagnostic virology are changing.

In this paper, we shall briefly discuss some of the recent developments in diagnostic virology and describe the services of a virology laboratory located in a VA medical center that provides health care primarily for older males. Data presented here demonstrate that a virus diagnostic laboratory can now be operated on a modest scale, tailored to the needs of the patients it serves, and can provide useful information for patient care and management.

## Virus Diagnostic Methods

### Collection of specimens

Viruses are obligate intracellular organisms and therefore require living cells in order to survive and replicate. Accordingly, after collection from patients, clinical specimens must be brought promptly to the laboratory and tested in appropriate cultures as soon as possible. The best results are obtained by the inoculation of cell cultures with clinical specimens "at the bedside;" if necessary, swabs can be placed in either viral transport medium containing a balanced salt solution with a protein stabilizer, gelatin or calf serum, or the new commercially available Virocult$^{R}$* collection and

---

M.L. LANDRY, M.D., Co-ordinator, Virology Laboratory, VA Medical Center; Post-doctoral fellow, Laboratory Medicine, Yale University School of Medicine, G.D. HSIUNG, Ph.D., Chief, Virology Laboratory, VA Medical Center, West Haven, CT; Professor, Laboratory Medicine, Yale University School of Medicine

*Medical Wire and Equipment Co., Cleveland, Ohio.

transport device. Urines, stools, spinal fluids, and other body fluids are placed in sterile containers. If there is a delay in testing the specimens, they can be stored for an hour or two at 4°C. If a longer delay is necessary, specimens should be frozen at -70°C (not -20°C). Frozen specimens can then be transported to distant laboratories in dry ice.

## Choice of specimens

The specimens that should be obtained depend on the clinical syndrome and the viruses suspected. Comprehensive lists of the appropriate specimens to be obtained in each situation can be found in a number of textbooks, including those listed in the references.[4,5,6] In general, specimens should be obtained early in illness; however, certain viruses, including cytomegalovirus, enteroviruses and adenoviruses, can be excreted for prolonged periods.

## Virus isolation

Since viruses require living cells in which to replicate, cell-free media cannot be utilized in virology as it is in bacteriology. Instead, clinical specimens must be inoculated into either cell cultures or laboratory animals for virus isolation.

*Cell cultures:*

Three main types of cell cultures are used: primary cell cultures, diploid cell lines and continuous cell lines. Primary cultures are made directly from animal or human tissues, diploid cell lines are most commonly derived from human embryonic lung, and continuous cell lines are usually derived from tumors. The latter can be serially propagated indefinitely. Many different types of primary cell cultures (e.g. monkey kidney, rabbit kidney), human diploid cell lines (e.g. WI-38), and continuous cell lines (e.g. HeLa, Hep-2) are now available commercially. The choice of cell systems depends on the viruses sought, as cell cultures differ in their sensitivity to different viruses. The use of several cell types facilitates the chances of recovering a variety of virus types from clinical specimens. When a specimen is inoculated into cell cultures, the rapidity of recognition of the presence of a virus depends upon the quantity of virus in the specimen and the sensitivity of the cell culture used. This is illustrated in Figure 1. When a skin lesion containing herpes simplex virus (HSV) is inoculated into cell cultures, the virus-induced cytopathic effect (CPE) in primary rabbit kidney cells (RK) is often evident in 24 hours, whereas CPE may not be observed in WI-38 cell cultures until 48 hours. On the other hand, if the skin lesion is suspected to contain varicella-zoster virus (VZV), then WI-38 cells are necessary since RK cells are resistant to VZV infection. In addition, with VZV, cytopathic changes generally do not occur until 4 to 7 days after inoculation. In some instances, preliminary identification of the infecting virus can be made as soon as virus-induced cellular changes occur, based on the character of the CPE and type of cell culture involved, but final identification usually is accomplished by a neutralization or other serological test using type-specific antiserum, which can be time-consuming.

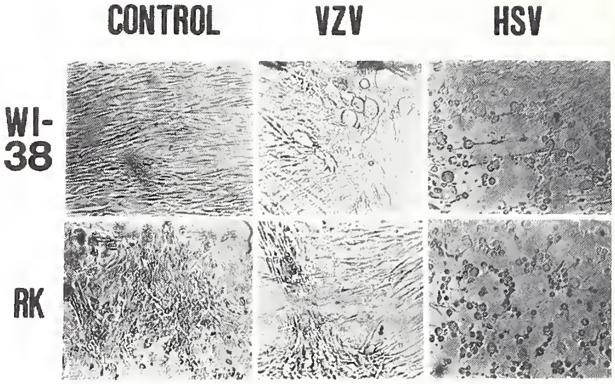


Figure 1
Differentiation of VZV and HSV by CPE in cell culture. Note: only a few rounded cells in WI-38 cells infected with VZV but no changes in RK cells, whereas HSV induces CPE in both WI-38 and RK cells.

Many alternative methods have been used to detect those viruses which do not produce CPE. Examples are the hemadsorption test for influenza and parainfluenza and the interference phenomenon for rubella.[4,5,6]

*Animal inoculation:*

To date there are still many human viruses that cannot be propagated in cell culture. Therefore animal inoculation may be necessary. For example, the inoculation of suckling mice is required for the isolation of most coxsackie A viruses.[4,5,6] However, facilities for small animals are not feasible in many clinical laboratories. Thus, continuous search for cell cultures to replace animal inoculation is necessary. Recently, we have found that guinea pig embryo cell cultures are a sensitive culture system for the isolation of several types of group A coxsackieviruses, including A2, A6, A8 and A10,[7] facilitating the isolation and cultivation of at least these coxsackievirus types.

## Direct microscopy

Light microscopy has been used for identifying virus-induced inclusions in infected tissues and skin lesions, particularly in smallpox (Guarnieri bodies) and herpesviruses (Cowdry type A inclusions). Characteristic multinucleated cells may be seen in scrapings of lesions produced by herpes simplex and varicella-zoster infections.[6] However, the identity of each virus cannot be conclusively established by these methods. Electron microscopy can be helpful in recognizing viral particles in clinical specimens and tissue biopsies;[8,9] however, at the present time it is not available for routine diagnostic purposes. Recently, the use of immune electron microscopy (IEM) has led to the discovery of two viruses which do not grow in tissue culture, but are common causes of gastroenteritis, i.e. rotavirus and Norwalk agent.[10,11] By this technique, convalescent (immune) serum is mixed with stool concentrate from the patient, causing viral particles to aggregate and rendering them readily apparent. IEM remains the main means of identifying these viruses.

## Serology

*Antigen detection:*

Currently there is tremendous interest in the development of techniques for rapid diagnosis of viral agents in clinical specimens. One approach has been the detection of viral antigens by the use of specific viral antibody labeled with a marker, either fluorescein (immunofluorescence), peroxidase (immunoperoxidase), or radioisotope (radioimmunoassay, RIA) to allow detection of the viral antigen by means of the antigen-antibody reaction. Although the detection of hepatitis B antigen by RIA has been very successful, these techniques have not become routine for other viruses due to the vast number of viruses and the difficulty in obtaining purified, specific antibody preparations. However, these techniques have the advantage of being rapid, do not require the presence of infectious virus, and, at this time, are particularly useful for those viruses that are not readily propagated in cell cultures.

*Antibody detection:*

Most commonly, serology is used to detect an antibody rise in the patient's serum to the infecting virus. There is an inherent time delay in this test, as both acute and convalescent sera are necessary to detect a diagnostic rise (four-fold or greater), and convalescent serum is generally obtained at least 2 weeks after the onset of the illness. In addition, serologic detection of antibody rise in the serum for certain virus groups (e.g. rhinoviruses and enteroviruses) is not practical. For both of these groups of viruses, there is no "group antigen"; thus antibody for each serotype must be sought individually. For rhinoviruses, this amounts to over 100 serotypes, and for enteroviruses, 67 serotypes. Furthermore, interpretation of serologic results in some groups of viruses may be complicated by concurrent rises in antibody to other viruses of the same group.[5,6] For example, when one is infected with varicella-zoster virus, a four-fold rise in antibody can occur to both herpes simplex and varicella-zoster viruses, resulting in diagnostic confusion.[12] This "heterologous" antibody rise has been attributed to possible antigenic similarities between the two viruses. However, we recently have found that in patients with VZV infection, simultaneous infection with HSV may occur in the throat and is often asymptomatic.[13] Thus, the observed double antibody rise may in fact be due to dual infection with both VZV and HSV and only viral culture can identify the infecting virus or viruses in this situation.

## The Virus Diagnostic Laboratory at the VA Medical Center

The clinical virology laboratory at the West Haven VA Medical Center is a small one associated with a research facility. The clinical virology laboratory was founded by Dr. R.H. Green in 1968, and by the end of 1979 had processed a total of 1861 specimens for virus isolation and 1425 sera for antibody studies. Initially, 50-150 specimens for virus isolation were obtained per year, but more recently, that number has increased to 200-350 per year, probably due to increased interest in viral diagnosis (Figure 2). A total of 243 viruses were isolated over these years, a 13% isolation rate. Hospitalized patients at the VA are predominately older males, often with chronic heart or lung disease, and are generally quite susceptible to respiratory infections. Consequently, the specimens submitted most frequently for virus isolation until 1974 were of respiratory origin, i.e. throat swabs, nasal swabs, and sputums (Table 1). However, as the importance of herpesvirus infections was recognized in hematology-oncology patients, in transplant recipients, as a common cause of both venereal disease and sporadic encephalitis and as antiviral therapy was introduced for severe herpesvirus infections, there was a dramatic change in the types of specimens submitted and viruses sought. Swabs of mucous membrane or skin lesions increased from 5% to 38% of specimens submitted for virus isolation. In

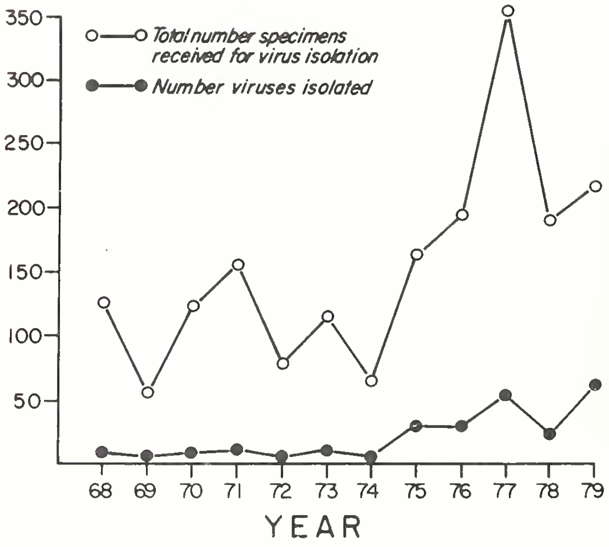


Figure 2
Numbers of specimens received and viruses isolated from 1968 to 1979; Virology Laboratory, VA Medical Center, West Haven, Conn.

Table 1
COMPARISON OF SPECIMENS RECEIVED DURING TWO CONSECUTIVE TIME PERIODS

| *Specimens received* | *1968-74* | *1975-79* |
|---|---|---|
| | *(Percent* | *of Total)* |
| Throat swab, nasal swab, sputum | 43 | 18 |
| Rectal swab, stool | 15 | 7 |
| Mucocutaneous lesion swab | 5 | 38 |
| Cerebrospinal fluid | 7 | 10 |

the later years, RK and guinea pig embryo (GPE) cell cultures, which are most sensitive for the isolation of herpes simplex viruses, were added to the test systems utilized. These changes in specimens and cell cultures were likewise reflected in the viruses isolated (Table 2). As shown in this table, respiratory viruses predominated in the early period, but since 1975, herpesviruses have comprised 95% of the viruses isolated. Since HSV isolates are very frequent in the laboratory, typing of all HSV isolates is desirable. This is important for epidemiologic purposes and, in the future, may be important therapeutically, as HSV-1 and HSV-2 may differ in their response to antiviral therapy. Typing is based on differential cell susceptibility, that is, the ability to induce virus plaques in GPE and chick embryo (CE) cell monolayers (Figure 3, reference 14). HSV-1 induces plaques in GPE cells only, whereas HSV-2 induces larger plaques in both GPE and CE cells, thus facilitating the identification procedure and eliminating the antigenic crossover problems between the two types.

Table 2
VIRUS ISOLATIONS AT WEST HAVEN VA MEDICAL CENTER VIROLOGY LABORATORY

| *Virus Isolated* | *1968-74* | *1975-79* |
|---|---|---|
| | *(Percent of Total)* | |
| Influenza | 45 | 1 |
| Parainfluenza | 8 | 1 |
| Adenovirus | 6 | 1 |
| Rhinovirus | 2 | 1 |
| Enterovirus | 2 | 1 |
| Herpes Simplex | 38 | 83 |
| Varicella-zoster | 0 | 10 |
| Cytomegalovirus | 0 | 2 |
| Total | | |
| Respiratory Viruses: | 60 | 4 |
| Herpesviruses: | 38 | 95 |

In the hospitalized veteran, often chronically ill or immunosuppressed, cytomegalovirus (CMV), VZV and HSV are all important pathogens and the availability of viral culture facilities has been very helpful for these patients. In the immunosuppressed patient, chronic atypical lesions can result from herpes simplex infections and the diagnosis can easily be missed, resulting in inappropriate, uncomfortable and ineffective treatments. Recently, one of our patients with chronic lymphocytic leukemia had chronic unsightly ulcerations on his face, nose, and lips for several months before coming to the VA. He had seen a dozen specialists and had received many useless and painful treatments. The condition had progressed. Within 24 hours of his clinic evaluation, when the diagnosis was suspected and his lesions were cultured, HSV-1 infection was confirmed by viral culture. He was subsequently referred to Sidney Farber Cancer Institute in Boston for acycloguanosine (Acyclovir) treatment and within 10 days, his face cleared completely.

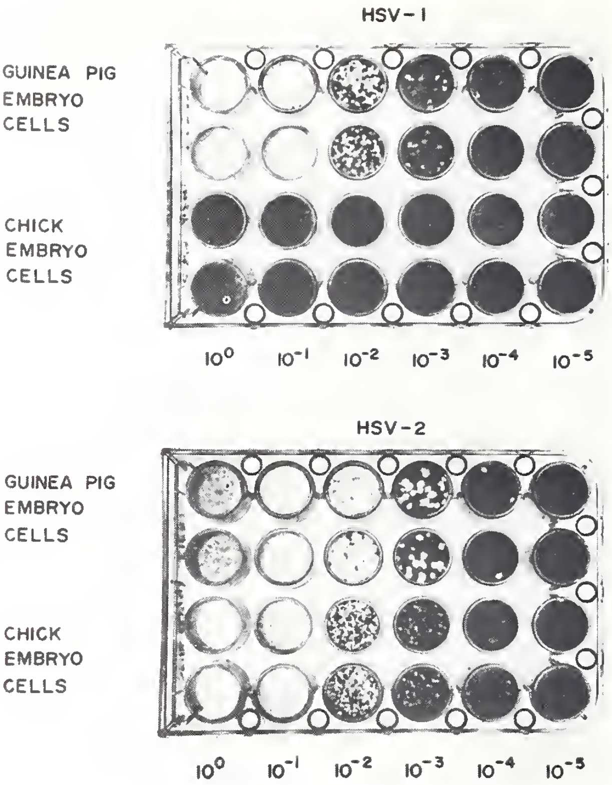


Figure 3
Typing of HSV-1 and HSV-2 by cell culture selection. Note: HSV-1 induces plaques (evident as light areas) in GPE cells but not in CE cells, whereas plaques are observed in both GPE cells and CE cells infected with HSV-2.

During 1979, two patients with eczema presented to the VA medical center with Kaposi's varicelliform eruption, a serious infection that can be caused either by herpes simplex or vaccinia virus. The infecting virus cannot be determined clinically. In one case, the diagnosis of vaccinia virus infection was made within one hour by electron microscopic examination showing poxvirus particles in scrapings of the skin lesions, and by viral culture showing CPE in rhesus monkey kidney cells within 24 hours. The other case proved to be due to herpes simplex, as virus-induced CPE typical of herpesvirus infection was evident in RK cells within 24 hours. Treatment is available for severely ill patients with these infections and differs depending on the causative virus (e.g. methisazone and vaccinia immune globulin for vaccinia virus infection and adenine arabinoside for HSV).

Among outpatients, younger patients predominate and in this group the majority of specimens are for the diagnosis of genital herpes. This diagnosis can usually be made in 24-48 hours and determination of HSV type may be helpful in determining the source of the infection as well as in predicting whether the infection will recur, as HSV-1 acquired genitally, according to recent reports,[15] may be less likely to be recurrent than HSV-2. A definite diagnosis should be established, as any woman who has either had genital herpes or had sexual contact with a male with genital herpes is considered "high risk" for genital herpes during pregnancy and must be monitored closely during the last 4-8 weeks of pregnancy, preferably with viral cultures, in order to prevent infection of the neonate.[2] In addition, such women are at increased risk of developing cervical cancer and should be followed with frequent Pap smears. In a number of cases, genital ulcerations were found not to be due to HSV and in several instances were due to herpes zoster in the genital area, an infection that is not venereal in origin, and will not be recurrent. Scrapings of the lesions in both HSV and VZV will reveal Cowdry type A inclusions and multinucleated cells. Serology, as previously mentioned, may not distinguish between them, but viral culture will, as indicated above.

As a result of our affiliation with a research facility, other important aspects of viral infections can be pursued. In December 1979, there were three deaths from culture-proven herpes encephalitis in the New Haven area in an interval of three weeks, and, in addition, there were a number of suspected cases that were not biopsied or cultured. Two of the three brain isolates were originally isolated in the VA virology laboratory, the other one at the Yale-New Haven Medical Center virology laboratory. Due to the concern that these cases might represent an epidemic, all three virus isolates were analyzed by restriction endonuclease mapping of their DNA in collaboration with Dr. William Summers of Yale University School of Medicine. It was found that the three brain isolates were different in their DNA fingerprinting, ruling out person-to-person spread of a virulent strain as the cause of this unusual cluster of herpes encephalitis cases.

## Changing Interest in Virus Groups

As one looks back over the past twenty to thirty years, it is apparent that interest in different virus groups has fluctuated tremendously.[16] This is probably due to advances in technology. It was during studies on poliovirus that tissue culture for virus isolation was discovered, and diagnostic virology as we know it now got its start. During these early years, research was centered on the polioviruses, culminating in the development of an effective poliovirus vaccine that has essentially abolished the once devastating epidemics in this country. As a result, interest in poliovirus and other enteroviruses has declined considerably. Indeed, the earlier review on diagnostic virology in this journal was concerned primarily with the diagnosis of enterovirus infections.[1] On the other hand, herpesviruses were not considered important pathogens, but rather ubiquitous viruses that usually did not cause disease. However, in recent years, there have been dramatic changes: herpes simplex was recognized as an important and frequent cause of venereal disease and serious neonatal infection, and HSV-2 infection has been associated with cervical cancer; Epstein-Barr herpesvirus was linked to Burkitt's lymphoma, nasopharyngeal carcinoma and infectious mononucleosis; the importance of CMV infection in neonates and transplant recipients was recognized; and varicella zoster virus infection has resulted in serious infections in the immunosuppressed. These findings led to a sudden surge in interest in herpesviruses, as reflected in the number of articles published per year in the Index Medicus (Figure 4). The most dramatic example is herpes simplex virus, explained at least in part by its link with cancer and by the successful treatment of HSV encephalitis with adenine arabinoside. This increased interest in herpesviruses today is apparent not only at the West Haven VA Medical Center, as described in the preceding section, but throughout the country.

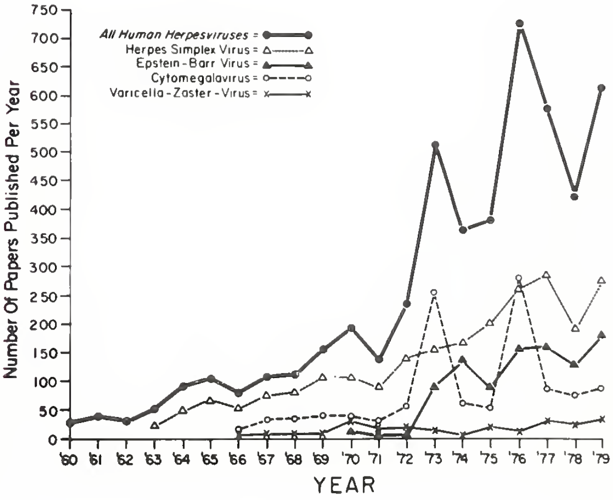


Figure 4
The recent increase in interest in herpesviruses as reflected in the number of papers published per year in the Index Medicus.

## Summary

Despite the prevalence of viral infections, routine isolation of viruses from clinical specimens is not commonly attempted; the facilities are not readily accessible, results are often delayed and treatment is not available. With recent advances in transplantation technology, cancer chemotherapy, and the development of antiviral therapy, the need for rapid, accurate diagnosis of viral infections is obvious. Since clinical specimens usually contain minimal amounts of infectious virus, transportation to a distant laboratory generally results in either loss of viable virus or delay in obtaining results.[17] Thus, a hospital affiliated virology laboratory should greatly facilitate the testing process. A variety of types of cell cultures are now available commercially and the services of the virology laboratory, depending on its capacity, can be tailored to the needs of the patient population it serves in order to provide useful information for patient care and management. As the VA experience illustrates, the past decade has witnessed dramatic changes in clinical virology. Hopefully by the end of the next decade, when this subject is reviewed again, effective therapy for many common viral infections and more rapid means to identify specific viral agents will have become available.

## ABBREVIATIONS

CPE: cytopathic effect
IEM: immune electron microscopy
RIA: radioimmunoassay
Viruses:
  HSV-1: herpes simplex virus type 1
  HSV-2: herpes simplex virus type 2
  VZV: varicella-zoster virus
  CMV: cytomegalovirus
Cell cultures:
  WI-38: human embryonic lung fibroblasts
  HeLa: human carcinoma of cervix
  Hep-2: human epidermoid carcinoma of larynx
  RK: rabbit kidney
  GPE: guinea pig embryo
  CE: chick embryo

## REFERENCES

1. Hsiung GD and Horstman DM: The virus diagnostic laboratory. Conn Med 25: 403-407, 1961
2. Nahmias AJ and Roizman B: Infection with herpes-simplex viruses 1 and 2. N Engl J Med 289:667-674, 719-725, 781-789, 1973
3. Whitley RJ, Soong SJ, Dolin R, Galasso GJ, Ch'ien LT, and Alford CA: Adenine arabinoside therapy of biopsy-proven herpes simplex encephalitis. N Engl J Med 297:289-294, 1977
4. Hsiung GD: *Diagnostic Virology.* Yale University Press, New Haven, Conn., 1973
5. Hsiung GD and Green RH: (eds). CRC Handbook Series in Clinical Laboratory Science. Section H: Virology and rickettsiology. CRC Press, West Palm Beach, Fla., 1978
6. Lennette EH and Schmidt NJ: (eds). *Diagnostic Procedures for Viral, Rickettsial, and Chlamydial Infections.* American Public Health Association, Inc., Washington, D.C., 1979
7. Landry ML, Madore HP, Fong CKY, and Hsiung GD: Use of guinea pig embryo cells for the isolation and propagation of group A coxsackie-viruses. J. Clin Microbiol 13:588-593, 1981
8. Almeida JD: Practical aspects of diagnostic electron microscopy. Yale J Biol Med 53:5-18, 1980
9. Doane FW: Virus morphology as an aid for rapid diagnosis. Yale J Biol Med 53:19-26, 1980
10. Flewett TH, Bryden AS and Davis H: Virus particles in gastroenteritis. Letter, Lancet 2:1497, 1973
11. Kapikian AZ, Wyatt RG, Dolin R, Thornhill TS, Kalica AR, and Chanock RM: Visualization by immune electron microscopy of a 27 nm particle associated with acute infectious nonbacterial gastroenteritis. J Virol 10:1075-1081, 1972
12. Schaap GJP and Huisman J: Simultaneous rise in complement-fixing anti-bodies against herpesvirus hominis and varicella-zoster virus in patients with chicken pox and shingles. Arch Ges Virusforsch. 25:52-57, 1968
13. Landry ML and Hsiung GD: Diagnosis of dual herpesvirus infection: varicella-zoster and herpes simplex viruses. Abstracts of the International Conference on Human Herpesviruses, p. B24, 1980
14. Anderson CA, August MJ, and Hsiung GD: Pathogenicity of wild-type and temperature-sensitive mutants of herpes simplex virus type 2 in guinea pigs. Infect Immun 30:159-169, 1980
15. Kawana T, Kawguchi T, and Sakamoto S: Clinical and virologic studies on genital herpes. Lancet 2:964, 1976
16. Hsiung GD: Progress in clinical virology - 1960 to 1980: A recollection of twenty years. Yale J Biol Med 53:1-4, 1980
17. Peterson LR, Moore BM, Edelman CK and Balfour HH: Primary virus isolation by a satellite laboratory. Arch Pathol Lab Med 104:9-10, 1980

## ACKNOWLEDGEMENTS

This work was supported in part by the U.S. Public Health Service Research Training Grant T-32-AI 07018 from the Institute of Allergy and Infectious Diseases, National Institutes of Health, and the Veterans Administration Research Fund.

# Sulfinpyrazone Induced Uric Acid Urolithiasis with Acute Renal Failure

MICHAEL T. KOVALCHIK, III, M.D.

**ABSTRACT—The emergence of antiplatelet agents in the treatment of a variety of clinical disorders has led to the widespread use of sulfinpyrazone. Little attention has been paid to the uricosuric action of this drug. The patient reported was placed on sulfinpyrazone therapy after coronary artery bypass grafting to promote graft patency. The patient had hyperuricemia, a history of gout and only one functioning kidney. Six months after sulfinpyrazone therapy was initiated the patient developed acute renal failure secondary to a large uric acid stone obstructing the distal ureter of the solitary functioning kidney. Recovery ensued after the stone was removed surgically. This report serves to emphasize the multiple pharmacologic effects of sulfinpyrazone.**

Sulfinpyrazone is an uricosuric drug that has been utilized in the treatment of hyperuricemic states.[1] More recently, sulfinpyrazone has been demonstrated to be an effective agent for reducing platelet adhesion.[2] Because of its antiplatelet effect, sulfinpyrazone is in widespread use for the treatment of patients with arteriovenous shunts, transient ischemic attacks, prosthetic heart valves, recurrent venous thromboembolism and coronary artery disease after bypass grafting.[2-5] In the present study, a patient treated with sulfinpyrazone following coronary artery bypass surgery developed uric acid stones with obstructive uropathy and severe renal failure. This report illustrates the clinical importance of the uricosuric effect of this antiplatelet agent.

## CASE REPORT

A 54–year–old woman was first evaluated at the University of Colorado Medical Center in November 1975 for insulin dependent diabetes mellitus of fifteen years' duration, coronary artery disease with angina, systemic hypertension and arthritis. A diagnosis of gout had been established previously and treatment with allopurinol instituted, but the patient discontinued this treatment six months prior to her initial evaluation at the University of Colorado Medical Center. Uric acid levels were as high as 12.1 mg/dl prior to the institution of drug therapy. Further history revealed that she had passed "gravel" on several occasions in the past. Medication included Aldactazide twice daily, indomethacin 100 mg daily, digoxin 0.25 mg daily and insulin 30 units NPH daily. After initial evaluation, increasing angina necessitated hospitalization at Colorado General Hospital in February, 1976. Cardiac catheterization revealed severe three vessel coronary artery disease. Triple vessel coronary artery bypass grafting was performed in March, 1976. She was discharged on the following medications: sulfinpyrazone 800 mg daily, Aldactazide twice daily, indomethacin 100 mg daily, propranolol 15 mg daily and insulin 30 units NPH daily.

She presented to Colorado General Hospital in August 1976 after a syncopal episode associated with dyspnea and abdominal pain. She was found to be in pulmonary edema with profound metabolic acidosis (pH 7.13) and renal failure. BUN and serum creatinine were 100 mg/dl and 11.1 mg/dl, respectively. Her BUN and serum creatinine were 28 mg/dl and 1.4 mg/dl, respectively, in March 1976. Acute hemodialysis was performed via an A-V shunt. During hemodialysis, she developed severe left lower quandrant pain with rebound tenderness. An exploratory laparotomy was performed;however, a cause of the abdominal pain was not found. Hemodialysis was continued post-operatively, and her urine output averaged approximately 300 ml/day for the 10 days following surgery. Excretory urography performed on the 10th post-operative day revealed a small nonfunctioning left kidney and distal obstruction of the right ureter. Review of excretory urograms from another hospital confirmed the presence of a small nonfunctioning left kidney; however, the right kidney was normal without evidence of urolithiasis. A percutaneous nephrostomy tube was placed and the patient immediately began producing large volumes of urine. Serum creatinine fell to 1.9 mg/dl and dialytic therapy was discontinued. Serum uric acid obtained during the postobstructive diuresis was 4.4 mg/dl. Right antegrade ureteropyelography demonstrated a radiolucent intraluminal mass approximately 6 cm from the ureteral orifice (Figure 1). A right open ureterolithotomy was performed and a 5 x 7 x 12 mm calculus weighing 323 mg was removed. Analysis revealed the calculus to consist of 100% uric acid. She began passing increasing amounts of urine via the urethra postoperatively, and the nephrostomy tube was removed five days later. She was discharged with a BUN of 49 mg/100 cc and a creatinine of 2.1 mg%. Eight weeks following relief of obstruction her creatinine clearance was 41 ml/min and a serum creatinine was 1.7 mg/dl. At this time, a 24-hour urinary uric acid excretion was 827 mg (while still being maintained on sulfinpyrazone therapy).

---

MICHAEL T. KOVALCHIK, III, M.D., Director, Dialysis Unit, The Charlotte Hungerford Hospital, Torrington, Ct.

*Supported in part by a grant from the Rocky Mountain Kidney Foundation.*

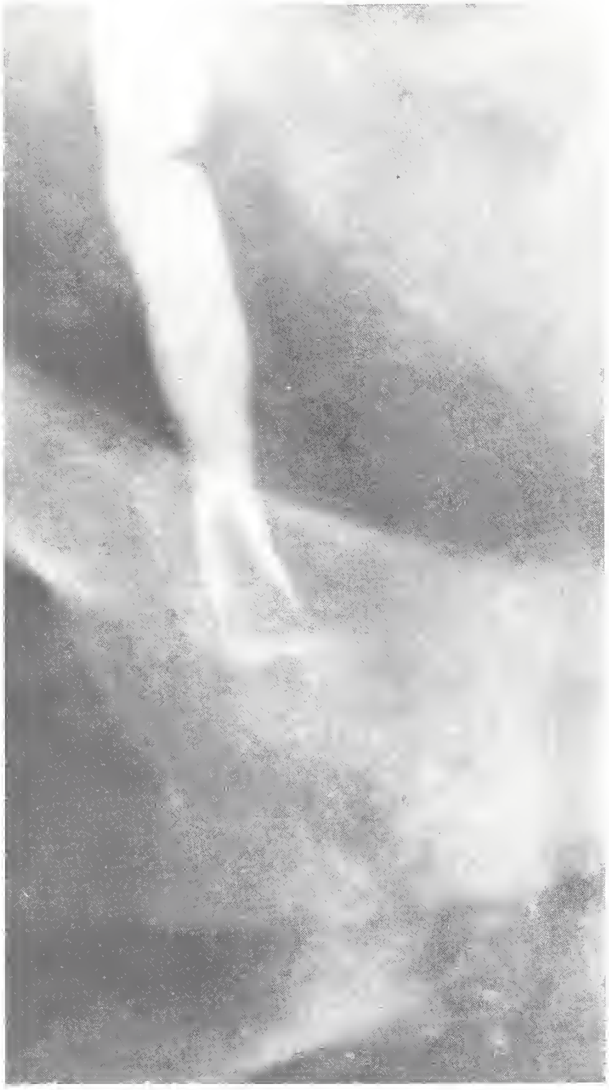


Figure 1

## Discussion

The patient described in the present report demonstrates the necessity of excluding obstructive uropathy in patients with unexplained acute renal failure. In our experience with 165 consecutive cases of acute renal failure at the University of Colorado Medical Center, obstructive uropathy was the cause of renal failure in 5-10% of the cases (unpublished observation).

The urinary calculus recovered in the present case contained 100% uric acid, thus strengthening our clinical suspicion that the uricosuric effect of sulfinpyrazone may have played a role in the development of the obstructive uropathy. The patient had a history of gout and of passing gravel. Despite this history and in the presence of a single functioning kidney, a known uricosuric agent was prescribed. A uric acid calculus subsequently developed obstructing her only functional kidney resulting in severe renal failure necessitating dialysis.

Sulfinpyrazone is now undergoing a resurgence of clinical use due to its antiplatelet effect (2). The recent report of the beneficial effect of sulfinpyrazone in the prevention of cardiac death after myocardial infarction will no doubt dramatically increase the use of sulfinpyrazone in view of the number of myocardial infarctions occurring yearly in the United States (10). In spite of the widespread application of sulfinpyrazone as an antiplatelet agent, recently referred to as a "New Job for an Old Drug," our experience has been that many physicians are unaware of its uricosuric effect (11). Gutman and Yu reported that up to 9% of patients taking uricosuric agents may develop urolithiasis. Considering the widespread use of this drug, it is likely that urolithiasis will be encountered with increasing frequency. The present report thus serves to emphasize a potentially reversible complication of sulfinpyrazone therapy.

## REFERENCES

1. Kelly, WN,: Current therapy of gout and hyperuricemia. Hospital Practice 11:69-76, 1976
2. Genton E, Gent M, Hirsh J, Harker LA,: Platelet-inhibiting drugs in prevention of clinical thrombotic disease. New Engl. J. Med. 293:1174-1178, 1236-1240, 1296-1300, 1975.
3. Kaegi A, Pineo GF, Shimizu A, Trivedi H, Hirsh J, Gent M,: Arteriovenous-shunt thrombosis, prevention by sulfinpyrazone. New Engl. J. Med. 290:304-306, 1974
4. Evans G,: Effect of platelet-suppressive agents on the incidence of amaurosis fugax and transient cerebral ischemia, cerebral vascular diseases: VIII th Conference. Edited by F.H. McDowell, R.W. Brennan (New York, Grune and Stratton 1973), pp. 297-299.
5. Sullivan JM, Harken DE, Gorlin R,: Pharmocologic control of thromboembolic complications of cardiac-valve replacement. New Engl. J. Med. 284:1391-1394, 1971.
6. Steele P, Battock D, Pappas G, Genton E,: Correlation of platelet survival time with occlusion of saphenous vein aorto-coronary bypass grafts. Circ. 53:685-687, 1976.
7. Fessel WJ, Siegelaub AB, Johnson ES,: Correlates and consequences of asymptomatic hyperuricemia. Arch. Intern. 132:44-54, 1973
8. Gutman AB, Yu TF,: Protracted uricosuric therapy in tophaceous gout. Lancet 2:1258-1260, 1957.
9. Kelley WN,: Effect of drugs on uric acid in man. Ann. Rev. of Pharmacology 15:327-350, 1975.
10. The Anturane Reinfarction Trial Research Group: Sulfinpyrazone in the Prevention of Cardiac Death After Myocardial Infarction. New Engl. J. Med. 298-289-295, 1978.
11. Relman AS,: (Editorial) New Job For An Old Drug? New Engl. J. Med. 298-333-334, 1978.

# The Treatment of Aneurysm of the Common Carotid Artery by Resection and Vein Graft

TEODORO SAIEH, M.D., MASSOUD A. MARJANI, M.D.
AND EDWARD DUNN, M.D.

**ABSTRACT—Because of the infrequency with which aneurysms of the common carotid artery are seen, a case secondary to atherosclerosis is presented. The etiology and therapy of common carotid aneurysm is briefly reviewed.**

Aneurysms of the common carotid artery are very uncommon, Beall[1] et al found only seven cases out of 2,300 operations done for artery aneurysms at Baylor University. One year later, 1963, Raphael[2] and his associates reported only six cases of cervical carotid aneurysms seen at the Mayo Clinic over a period of 27 years. Atherosclerosis has been the most common cause, although there are reports of cervical aneurysms secondary to radiation therapy,[3,4] trauma, syphilis, adjacent infections and arteritis, after percutaneous angiography,[5] and at the site of endarterectomy procedures. Congenital aneurysms are extremely rare.

## Case Report

B.G., Hospital #06-00-73, a 66-year-old white female was admitted to Waterbury Hospital in January, 1980, with a history of a mass found by the patient on the left side of her neck. She thought it might be cancer so she went to see her physician who found a pulsatile mass at the level of the bifurcation of her left carotid artery. In addition, she was noted to have bilateral asymptomatic bruits, more pronounced on the left side.

She had undergone a previous left modified radical mastectomy for infiltrating duct carcinoma of the breast in October, 1977, and received postoperative radiation therapy one month later with 4,800 rads following a hockey stick pattern over the area. Her physical examination, except for the left sided neck mass and bilateral carotid bruits, was unremarkable.

An arteriogram showed bilateral carotid artery stenosis which appeared to be more significant on the left side, as well as a saccular aneurysm measuring about 1.5 cms and arising from the left common carotid artery just proximal to its bifurcation (Figures 1 and 2).

The patient underwent surgery shortly after admission. At operation, severe inflammatory reaction was found in the soft tissues around the vessel. The aneurysm was spherical and measured about 1.5 x 1.5 cms. The wall was very thin and fragile. The aneurysm was removed and accompanied by endarterectomy of the internal carotid artery. A reversed saphenous vein graft was placed end-to-end to restore the arterial blood flow, with the vein graft threaded over a Javid shunt, and the patient given systemic heparin before clamping of the vessels.

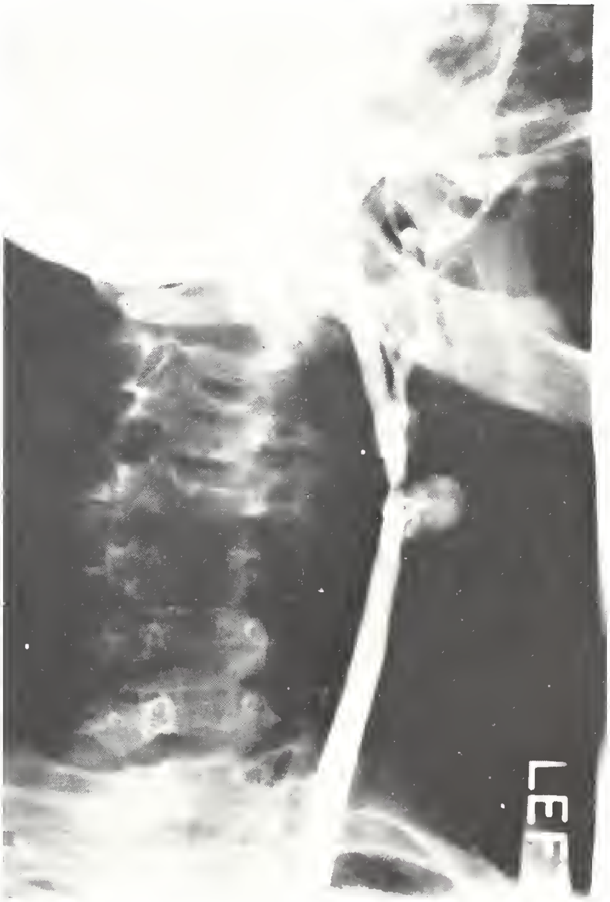


Figure 1
Preoperative Percutaneous transfermoral right carotid arteriogram showing marked stenosis.

---

TEODORO SAIEH, M.D., Chief Resident, General Surgery; MASSOUD A. MARJANI, M.D., Attending Staff, both of the Waterbury Hospital Health Center; EDWARD DUNN, M.D., Director of Surgical Services, Waterbury Hospital Health Center; Associate Clinical Professor of Surgery, Yale University School of Medicine.

Reprint requests to: 64 Robbins St., Waterbury, CT 06720 (Dr. Dunn).

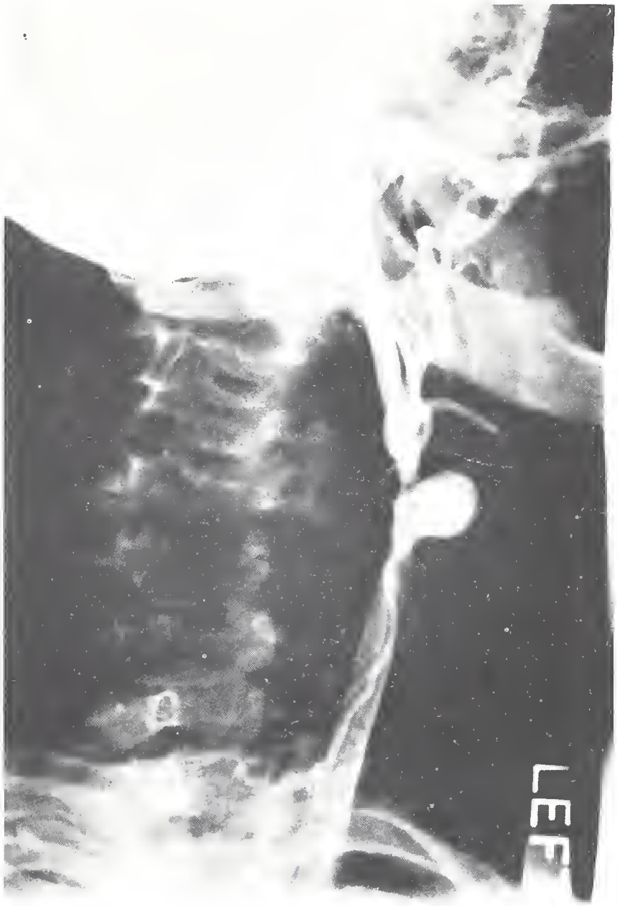


Figure 2
Preoperative percutaneous transfemoral left carotid arteriogram showing a saccular aneurysm arising from the left common carotid artery just proximal to its bifurcation in association with marked stenosis of the internal carotid artery.

Microscopic study of the wall of the aneurysm was done and showed changes compatible with atherosclerotic disease; the findings were not suggestive of changes secondary to radiation therapy as previously reported by Hayward[3] and Bole.[4]

The patient did well after surgery, with no neurological deficit. Four months later she remains asymptomatic. Recent Vascular Laboratory evaluation suggests patency of the vein graft (no delay on oculoplethysmography, no evidence of flow reversal by Doppler and a normal carotid phonoangiograph).

## Discussion

A palpable mass is commonly present in aneurysms of the cervical carotid artery as well as a bruit. Calcification on a plain x-ray film may be seen in some of the aneurysms although it is not specific as to etiology. Symptoms are either associated with concomitant stenosis and/or ulcerated plaques of the vessel, or secondary to ectasis with formation of clots inside of the aneurysm and distal embolization which appears as transient ischemic attacks (TIA's). In eight patients reported by Kaupp,[6] five had bilateral aneurysms. Rupture of cervical carotid aneurysms is very rare. Rittenhouse[7] reported a case with rupture of the aneurysm into the oropharynx, successfully treated with a bovine heterograft replacement.

Once the diagnosis of an aneurysm of the cervical carotid artery is suspected, an arteriogram is the definitive diagnostic study. Further information about the dynamic status of the collateral circulation can be obtained by non-invasive Vascular Laboratory evaluation.

Reconstructive surgery has become the treatment of choice. Excision and end-to-end anastomosis is most convenient, but when this is not possible, replacement grafts are used, preferably an autogenous vein graft as was used in this case.

## REFERENCES

1. Beall AC, Crawford ES, Cooley DA, et al: Extracranial aneurysms of the carotid artery. Postgrad Med 32:93, 1962
2. Raphael HA, Bernatz PE, Spittell JA Jr, et al: Cervical carotid aneurysms: treatment by excision and restoration of arterial continuity. Am J Surg 105:771, 1963
3. Hayward RH: Arteriosclerosis induced by radiation. Surg Clin N Am 52:359, 1972
4. Bole PV, Hintz G, et al: Bilateral carotid aneurysms secondary to radiation therapy. Ann Surg 181:888, 1975
5. Coleman PG and Kittle CF: Aneurysms of the common carotid artery. Surg Clin N Am 53:231, 1973
6. Kaupp HA, Haid SP, Jurayj MN, et al: Aneurysms of the extracranial carotid artery. Surgery 72:946, 1972
7. Rittenhouse EA, Radke HM and Summer DS: Carotid artery aneurysm. Review of the literature and report of a case with rupture into the oropharynx. Arch Surg 105:786, 1972

# An Update: Detection of Congenital Dysplasia of the Hip

THOMAS S. RENSHAW, M.D., JAMES M. CARY, M.D.
AND JAMES R. GAGE, M.D.

**ABSTRACT—The diagnosis of congenital dysplasia of the hip (CDH) is not always easy to make. The physical signs of hip dysplasia can vary greatly, not only among individuals, but also at various ages in the same child. Furthermore, roentgenograms may not be reliable during the first three months of life. This article presents occurrence data, the currently accepted etiologic hypothesis, and the variable pathology of CDH. Particularly emphasized is the physical diagnosis of subtle cases of CDH in the neonatal period, during infancy, and after independent walking begins.**

Congenital dysplasia of the hip (CDH) describes a spectrum of abnormal development of the hip joint. The pathology may range from the smallest detectable deviation from stable congruity of the femoral head in the depth of the true acetabulum to unreducible dislocation with advanced adaptive changes. Similarly, the diagnostic signs of CDH can vary, not only from patient to patient, but also during succeeding stages of development in the same patient. Certain abnormal findings in the neonatal period may disappear after the first few weeks of life, while other signs which may be readily apparent when the child begins walking, may have been undetectable during infancy.

When only mild-but-progressive dysplasia is present at birth and subluxation or dislocation has not yet developed, the initial clinical signs may be so subtle that early diagnosis is nearly impossible. There is no universal clinical finding which can be relied upon to detect all cases of CDH. The purpose of this article is to describe the pathology and diagnosis of CDH during the neonatal period, during infancy, and after independent walking begins.

## Occurrence and Etiology

The incidence of CDH varies widely among races but approximates one in 60 Caucasians* when the condition is defined as detectable instability of the hip at birth.[1] While many unstable neonatal hip joints will spontaneously become stable and develop normally, it has been shown that anywhere from 1.6 to 12 per thousand will persist as unstable hips and progressively deform without treatment.[2]

Although the specific cause of CDH remains unknown, a multifactorial etiology is widely accepted at present, the three most prominent factors being lack of acetabular depth, ligamentous laxity, and intrauterine breech positioning. As the embryonic hip socket forms, it is quite deep and circumferentially contains the head of the femur. During continued fetal development, the acetabulum becomes increasingly shallow until at birth acetabular depth is at its minimum. Thereafter, a gradual deepening recurs until the hip is normally well-contained by the age of four years.[3] The shallowness of the acetabulum, normally present at birth, predisposes to instability.

Some families have inherent ligamentous laxity and hypermobility of joints and may be predisposed to CDH. In addition, at birth the hormone relaxin is thought to influence the ligamentous integrity of the baby, particularly the female neonate.[4] If a child with inherent joint laxity is rendered even looser by hormonal influence, the hip joint may be at greater risk for dislocation.

Breech positioning has been statistically correlated with an increased risk of congenital hip dysplasia. While the incidence of breech presentation in the general population is recorded as approximately 3%, 17% of all CDH occurs in breech presentations. About one in 15 breech presentation female babies has an

---

*Blacks and orientals are far less likely to develop CDH.

---

THOMAS S. RENSHAW, M.D., Staff Orthopaedist, JAMES M. CARY, M.D., Director of Medical Education, JAMES R. GAGE, M.D., Director of Research; all of the Newington Children's Hospital.

Reprint requests to: Newington Children's Hospital, Newington, CT 06111 (Dr. Renshaw).

unstable hip or "hip at risk" and one in 35 breech infants has established dislocation of the hip at birth.[2] It is hypothesized that the hyperflexion with limited kicking and limited extension of the hip produced by intrauterine breech positioning allows adaptive shortening of the iliopsoas muscle to occur. Subsequently, when the newborn baby's hips are extended, the tightened muscle may lever the femoral head out of its shallow acetabulum.

CDH is also more common in females, perhaps because of hormonally-induced ligamentous laxity; more common in first-born, considered by some as caused by uterine "tightness" which may disappear with subsequent pregnancies; and more common in children with a strong family history for the disorder. Environmental factors such as ritualistic positioning of the neonatal lower extremities in hip extension and adduction may also be significant for increased risk of CDH.

### Pathology

If, in fact, a confluence of multiple factors is necessary for hip dysplasia to occur, then it seems reasonable that various combinations and quantitites of such factors can produce the variable pathological spectrum of CDH. The severe end of the spectrum is the teratologic or established intrauterine dislocation which, when detected at birth, can rarely be reduced by closed means. At the other end is the dislocatable hip, which is normally located within the acetabulum, but can be readily dislocated by a maneuver of flexion, adduction, and posterior axial pressure on the hip. This produces the Barlow sign,[1] which is a sudden acceleration as the hip leaves the socket, followed by abrupt deceleration as the soft tissues become taut. The reverse of this is the Ortolani sign,[6] occurring when the dislocated hip suddenly accelerates as it glides over the rim of the acetabulum and then abruptly decelerates as it seats into the depth of the socket.

Another pattern of pathology, the subluxation pattern, occurs when the acetabulum itself is primarily deformed and assumes a shape much more oval than the normal hemisphere. This produces a shallower, elongated socket in which the unstable hip can slide up and down in degrees of instability ranging from barely detectable to obvious pistoning.

The longer the hip joint develops abnormally, the more severe the secondary adaptive changes that occur. These changes include shortening of the musculotendinous structures that cross the hip joint, particularly the iliopsoas, rectus femoris, and hip adductor muscles. These can shorten to such an extent that the hip either cannot be reduced, or if it can be, it is only with markedly increased pressure on the femoral head. The softened, cartilaginous infantile femoral head is then compressed into the acetabulum like a sponge, cannot be perfused with oxygenated blood, and avascular necrosis with disastrous results supervenes. In such cases it is essential that the soft tissue contracture be overcome, either by preliminary traction or surgical release, prior to attempts at reduction.

Other secondary adaptive changes include failure of the empty acetabulum to develop its normal diameter and depth and flattening of the subluxed or dislocated femoral head as it is pressed against the wall of the pelvis, thereby failing to develop its normal nearly-spherical configuration. Significantly increased valgus (increased neck-shaft angle) and anteversion (forward inclination of the femoral neck) also frequently occur.

Finally, secondary adaptive changes develop in the hip joint capsule which surrounds the femoral head from its neck to the rim of the acetabulum, like a sleeve. If the hip is dislocated from its normal position, the capsule develops a stretched, waist-like or hourglass constriction so that even after traction has loosened the musculotendinous contractures, the femoral head may not fit back through the isthmus of the capsule. This is analogous to trying to push a button through a buttonhole that is too small. This condition requires surgical division of the hip capsule and iliopsoas tendon before reduction can be accomplished.

Retrieval of normal development of the hip may not be possible if secondary adaptive changes have persisted long enough. Of fundamental importance in the management of CDH is early diagnosis, before secondary adaptive changes are irreversible, so that the hip can develop to normality or as near to normality as possible.

### Diagnosis of CDH in the Neonatal Period

With an appreciation of the variable pathology of CDH, it is apparent that diagnosis of this condition in the neonatal period can be anything from quite simple and obvious to theoretically impossible. A classic diagnostic sign in the neonatal period is a hip which can be dislocated by Barlow's maneuver of flexion, adduction, and axial pressure in a posterior direction or can be reduced by the Ortolani maneuver, which essentially pulls the femoral head forward into the acetabulum by flexion, abduction, and lifting the femoral head anteriorly. These signs of dislocatability can be easily missed in a baby who is crying and kicking. They are not present in congenital subluxation (the saucer-shaped socket). With subluxation, telescoping or pistoning of the hip is a significant finding, but is detectable only with good relaxation of the baby's hip muscles.

Another very reliable sign, significant at any age, is the apparent short femur (Figure 1). This is seen when the baby is lying supine and the hips and knees are flexed to 90°. The level of the knees, i.e., the length of the thighs, should be equal and if one appears shorter than the other, the most likely reason is posterior subluxation or dislocation of the hip. This test goes by

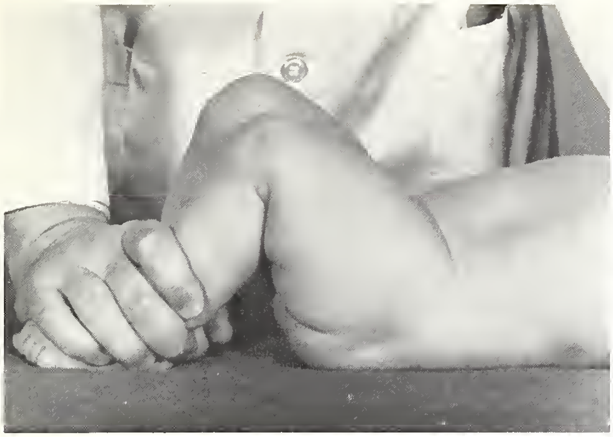


Figure 1
Left apparent short femur sign produced by posterior dislocation of the hip.

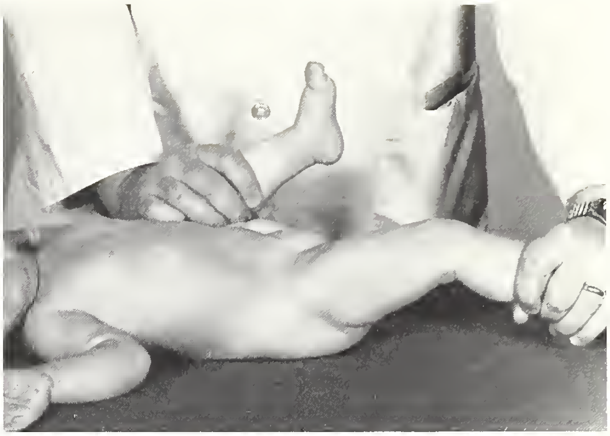


Figure 2a .
Right leg with normal neonatal hip and knee flexion contractures.

various names, including the Allis, Galeazzi, or Perkins sign, depending upon the position of the thighs, knees, and feet, but all are based upon the same anatomical condition. False positives of this test occur when there is true hypoplasia or shortening of the femur.

The most important and reliable physical diagnostic maneuver for detecting subtle dysplasia is the assessment of the mobility triad. It is known that since the fetus develops in a knee-chest position, babies are normally born with hip flexion contractures in the range of 20° to 40°. Unless there is frank breech positioning *in utero,* they also have a lesser degree of knee flexion contracture. In addition, they usually also have a very mild hip adduction contracture. These contractures, known as the mobility triad, are normal and usually persist throughout the first several months of life before gradually being stretched out by the active infant. Normally, the hip flexion contracture is slightly greater than the knee flexion contracture, which is slightly greater than the hip adduction contracture. The importance of assessing the mobility triad is to detect *asymmetry* between the two sides in any or all of the three contractures (Figures 2a - 2e). The most common finding is that when the hip is subluxed or dislocated posteriorly, it has lost its stable fulcrum in the acetabulum and proximal slipping has occurred, thereby producing slack in the tight flexor muscles crossing the hip and causing loss of the normal hip flexion contracture on the involved side. By posterior and superior displacement of the femoral head, the hamstring muscles are also slackened and the knee flexion contracture usually disappears on the involved side. On the other hand, the adduction contracture becomes greater on the involved side because the adductor muscles are tightened by the lateralization of the femoral head that usually accompanies CDH.

There are other physical findings which are more subtle and somewhat less reliable unless there is total

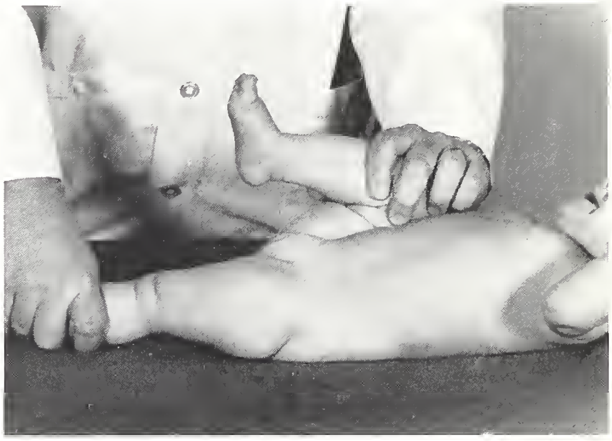


Figure 2b
Left CDH with abnormal loss of neonatal hip and knee flexion contractures.

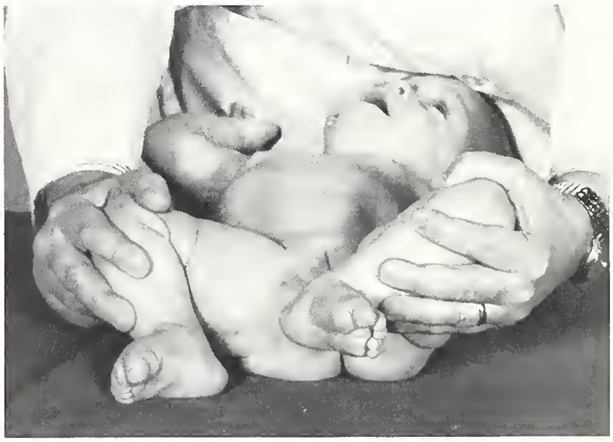


Figure 2c
Increased adduction contractures in the abnormal left hip with CDH.

dislocation of the hip. These include: a fullness in the buttock as the femoral head is displaced posteriorly: a palpable hollow or depression in the anterior groin where the femoral head is normally located; significant widening of the perineum, seen mostly in bilateral dislocation of the hips; and asymmetrical posterior positioning of the greater trochanter. Finally, asymmetrical thigh folds (Figure 3) are a frequently associated finding with CDH, although approximately 30% of normal infants may also have some degree of thigh fold asymmetry.

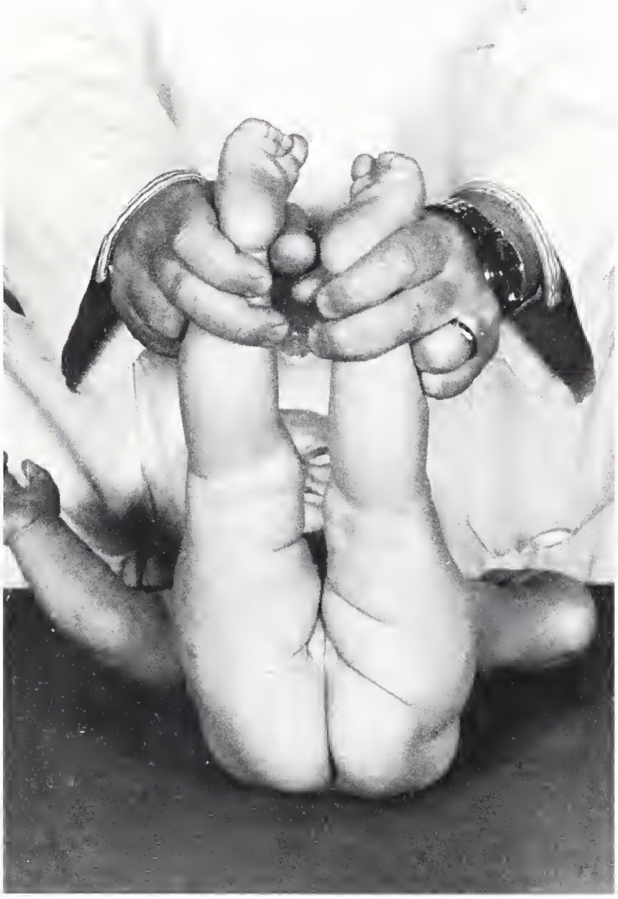


Figure 3
Left CDH with asymmetry of thigh skin folds.

Radiologic study in the neonatal period may not necessarily be diagnostic. At this age the femoral head is completely cartilaginous, its ossific nucleus has not yet appeared and it is not visible on plain roentgenograms. Because of this, mild degrees of hip dysplasia can be undetectable and even frank dislocation may be overlooked unless there is significant lateralization or proximal displacement of the femoral neck in relation to the acetabulum. Furthermore, an unstable hip may be located when the roentgenogram is taken and still be readily dislocatable.

In the majority of cases of hip joint instability detected in the neonatal period, reduction is easily accomplished by Ortolani's maneuver which, with appropriate preventive splinting of the hip, will maintain reduction and result in development of a normal hip joint. The position of immobilization must be one of hyperflexion without excessive abduction (no more than 50 to 60° per hip) in order to avoid avascular necrosis. Use of the Lorenz or "frog" position is absolutely contraindicated. Careful follow-up will detect cases of insidious subluxation with acetabular dysplasia and/or increased femoral anteversion and these can be managed appropriately. If the hip is not easily reducible, then it is likely that secondary adaptive changes exist and more complicated treatment will be necessary.

### Detection of CDH in Infancy

Although it is probable that most cases of CDH diagnosed beyond the neonatal period, but before age one year, were detectable at birth, nevertheless some certainly exist that were either normal or so close to normal at birth that detection clinically and radiologically was not possible. In either situation, as the infant grows older, secondary adaptive changes occur and the physical diagnostic picture changes.

By six weeks of age, the Ortolani and Barlow signs are usually gone; the hip is either not reducible or the acetabulum has become distorted so that the abrupt acceleration/deceleration phenomena no longer occur. The femoral head may piston in a saucer-shaped acetabulum or may be dislocated and closed reduction may not reasonably be possible. Shortening and/or interposition of soft tissue structures may prevent reduction as well.

In this period of development probably the most important diagnostic maneuver is assessment of the mobility triad. The usual findings are loss of the normal early hip flexion contracture with concomitant increase in the adduction contracture and loss of abduction on the involved side. The knee flexion contractures have normally disappeared early in infancy. The apparent short femur sign can also be present during this period and is a valuable diagnostic indicator.

The other signs, such as buttock fullness or asymmetry, hollow anterior groin, posterior positioning of the greater trochanter, and asymmetrical thigh folds may be less prominent as the infant grows older and may not be detectable at all. Again, it must be kept in mind that the changes of CDH may be subtle and insidious as the mildest degrees of dysplasia gradually become more pronounced. It is, therefore, essential that careful repeated examinations of infants' hips be carried out at each well-baby check-up.

As infancy progresses, radiologic examination is usually diagnostic. Such signs as lateral or proximal displacement of the femoral ossific nucleus, increased obliquity of the acetabular configuration, a break in

Shenton's line, and other signs of CDH are easily recognizable.

The simple preventive splinting or casting that was adequate treatment for most neonates is now inadequate because of secondary adaptive changes. Without careful evaluation and treatment of the patient, often including preliminary traction and arthrography of the hip, serious complications such as avascular necrosis, false reduction, redislocation, and progressive subluxation can occur. Congenital dysplasia of the hip diagnosed beyond the neonatal period usually requires more complex orthopaedic management.

### Detection of CDH in the Child Who is Walking

When the child begins walking, the most common diagnostic sign of hip dysplasia is an abnormal gait or limp. While this is readily apparent in a totally dislocated hip, it must be kept in mind that subtle grades of dysplasia may still be developing even though the gait appears nearly normal. It is essential to explain even a mild asymmetry or abnormality of gait in a preschool child by careful evaluation of the hips. Other physical finds of dysplasia in this age group are the persistence of apparent shortening of the thigh and persistence of the hip adduction contractures. By walking age the hip flexion contractures and knee flexion contractures have normally disappeared. The other previously mentioned signs of hip dysplasia may be present, although many of them may be much more subtle by the time the child reaches age one year or older. An exception is widening of the perineum, seen particularly with bilateral hip dislocation.

Roentgenography is diagnostic in this age group and even subtle signs of dysplasia are not difficult to detect. The management of older children with hip dysplasia is far more difficult than in the younger age groups and achievement of normal hip anatomy is much less likely.

### Conclusion

It should be re-emphasized that in many cases the diagnosis of congenital dysplasia of the hip is not easy. It requires a high index of suspicion and persistence on the part of the examiner in thorough evaluation of the hips. Occasional cases will still be missed, even by the most skilled physicians.[7] Any abnormality in the physical findings must be satisfactorily explained by further evaluation and roentgenograms. Roentgenograms are occasionally misleading in the first three months of life and should not be accepted as absolute evidence of a normal hip.

An adequate program for the detection of congenital hip dysplasia includes thorough newborn examinations and preventive treatment when indicated, careful reexamination during infancy at each well-baby checkup, and particular attention to any gait abnormality in an ambulatory child. It is only by conscientious screening examinations for CDH by physicians, by clinical nurse practitioners, and by nurses in the newborn nurseries that the significant volume of advanced congenital hip pathology currently seen at children's hospitals can be substantially reduced.

### REFERENCES

1. Barlow TG: Early Diagnosis and Treatment of Congenital Dislocation of the hip. J. Bone Joint Surg 44B:292-301. 1962
2. Ramsey P, MacEwen GD: Unpublished data. Cited in Coleman SS: Congenital Dysplasia and Dislocation of the Hip, St. Louis, 1978, CV Mosby Co., p 30
3. Ralis Z, McKibbin B: Changes in Shape of the Human Hip Joint During Its Development and Their Relation to Stability. J Bone Joint Surg 55B:780-785. 1973
4. Wilkinson JA: Prime Factors in the Etiology of Congenital Dislocation of the Hip. J Bone Joint Surg 45B:268-283. 1963
5. Carter CO, Wilkinson JA: Genetic and Environmental Factors in the Etiology of Congenital Dislocation of the Hip. Clin Orthop 33:119-128. 1964
6. Ortolani M: Congenital Hip Dysplasia in the Light of Early and Very Early Diagnosis. Clin Orthop 119:6-10. 1976
7. Coleman SS, Ilfeld FW, Westin GW: The Congenital Hip that Isn't. Scientific exhibit, 46th Annual Meeting, American Academy of Orthopaedic Surgeons, San Francisco, 1979

# Dual Biliary Enteric Fistulas

MICHAEL A. DEAN, M.D.

Biliary fistulas may occur as the result of spontaneous necrosis of a calculus through the wall of the biliary tree (gallbladder, common duct) into the lumen of an adjacent hollow viscus (stomach, duodenum, colon). Most frequently, this complication is found as a single fistula[1] between the gallbladder and the duodenum. A fistula between the gallbladder and the transverse colon is the second most frequent type. Dual fistulas occur less often, and usually involve the gallbladder, duodenum and colon.

The symptomatology of biliary fistula is often indistinguishable from that of chronic biliary tract disease and is frequently diagnosed at the time of surgery. The accuracy of diagnosis is considerably improved when routine barium studies reveal the fistulas. The purpose of this report is to emphasize the importance of such radiographic studies when the clinical situation is not clear and a high degree of suspicion exists. In this day of cost containment, there is a reluctance to order some tests that can be obviated by a thorough exploratory laparotomy, when surgery has already been elected.

## Case Report

This 73 year old widowed white female was admitted to St. Vincent's Medical Center on January 4, 1980, complaining of anorexia, nausea and epigastric pain most intense after her evening meal. In addition, she described shifting pain in the left lower quadrant. None of these symptoms was relieved by a bowel movement. On vacation in California two months prior to admission she developed some malaise and epigastric discomfort which she ascribed to change in diet and water and constipation. There was no weight loss, jaundice or blood in the stools.

In the past, she had an appendectomy (1930), total hysterectomy (1946), cysto-rectocele repair (1972), cataract surgery (1976). She had been treated for diverticular disease of the colon, anemia, borderline diabetes, G.I. hemorrhage (1976) and osteoarthritis.

In a review of the family history it was learned that a sister died of carcinoma of the stomach in 1979, and two members of her family were treated for diabetes mellitus.

Admission physical examination demonstrated epigastric and right upper quadrant tenderness, diffuse tenderness in the right lower quadrant, but less severe than in the epigastrium. A suggestion of a tender mass was present in the right upper quadrant and left lower quadrant. Rectal examination was performed with no difficulty and the stool was guaiac negative. Differential diagnoses considered were: cholelithiasis, diverticulosis, carcinoma of colon with liver metastasis and carcinoma of stomach.

Laboratory studies were as follows: W.B.C. 7,900 with normal differential, R.B.C. 4.25/$mm^3$, Hgb 11.7 gm/dl, Hct 34.3%., platlets 350,000/$mm^3$, glucose 170 mg/dl, urea nitrogen 16 mg/dl, amylase 110 Dye Units, total bilirubin 0.5 mg/dl, alkaline phosphatase 87 u/1, RAI 8.1 mg/dl, urinalysis was essentially normal. X-rays of the chest were normal. Abdominal films revealed a nonspecific gas pattern with a slightly prominent hepatic shadow. (Figure 1) Barium enema study was reported as showing no evidence of intrinsic or organic disease in the entire large bowel. (Figure 2) Ultrasound of the abdomen was performed and reported as follows: "The liver is of normal size and configuration. There is no evidence of focal defects within the liver. The intra-hepatic radicals are not found to be dilated. The common duct measures 0.4 cm in diameter which is

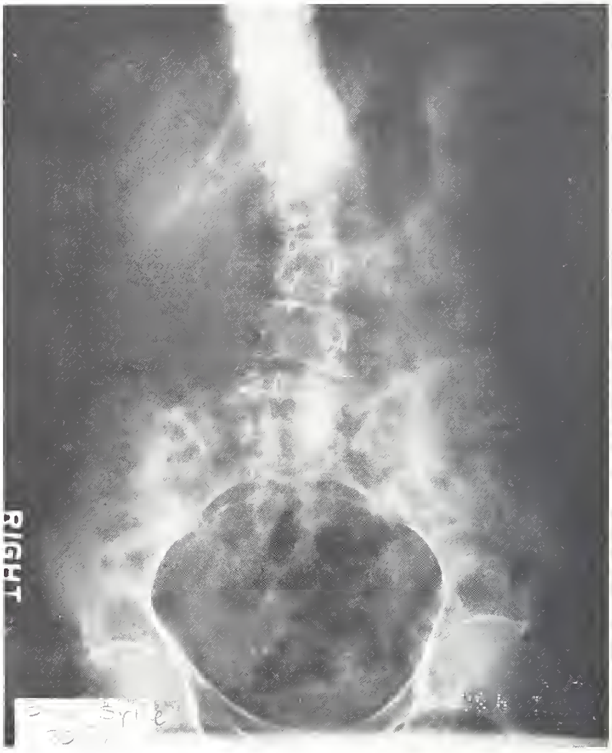


Figure 1
Flat plate of abdomen.

---

MICHAEL A. DEAN, M.D., Chief, Division of General Surgery, St. Vincent's Medical Center, Bridgeport, CT., Assistant Clinical Professor of Surgery, Yale University Medical School.

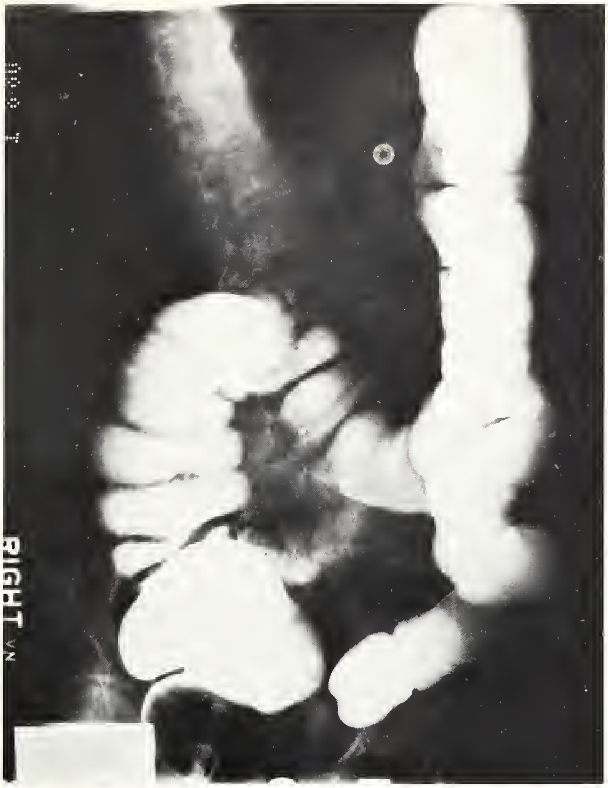


Figure 2
Barium Enema.

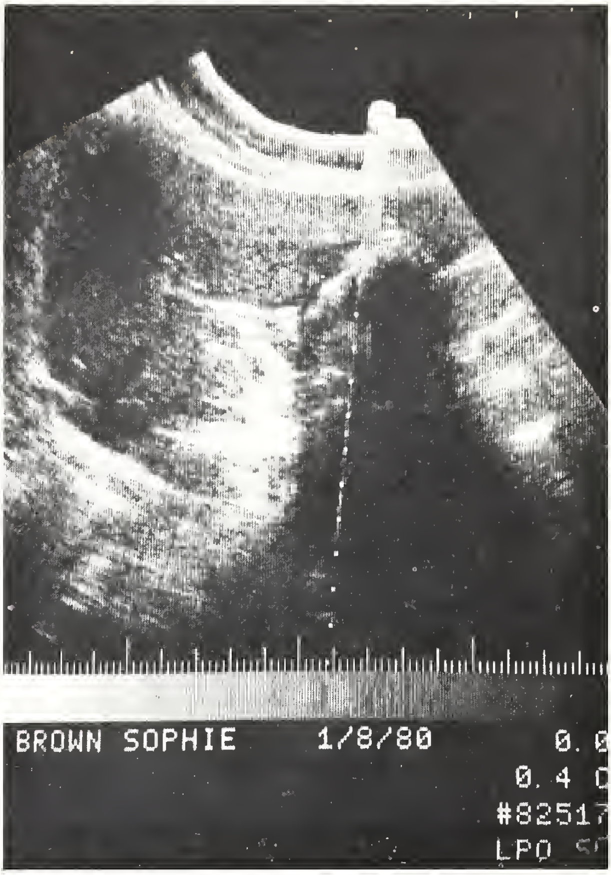


Figure 3
Ultra-sound shows dense echoes in the region of the gallbladder and normal diameter of common duct.

within normal limits. Dense echoes are seen in the region of the gallbladder with distal shadowing. This most likely represents a contracted gallbladder with stones. Imaging of the right kidney shows no abnormality. There is no evidence of ascites. There is no evidence of extra hepatic obstruction. Impression: Contracted gallbladder with stones." (Figure 3) Sigmoidoscopy performed prior to the barium enema was negative.

During these studies the patient was reasonably comfortable, but continued to have post-prandial distress. Surgical consultation was sought on the day of the ultrasound study and the conclusion offered that the patient had chronic cholecystitis and cholelithiasis. Elective cholecystectomy was suggested and accepted.

On Januray 10, 1980, the abdomen was explored and she was found to have an inflammatory mass in the right upper quadrant, consisting of adherant colon, omentum and duodenum. The liver edge was firm and a hard mass could be felt through the anterior surface of the right lobe directly over the normal position of the gallbladder. With sharp dissection it was possible to free the omentum and identify the transverse colon and duodenum intimately adherent to the gallbladder. The gallbladder was thick walled and its lumen was completely occupied by one large calculus so that the stone actually was a cast of the gallbladder (5.2 x 3.5 x 3.5 cm). The gallbladder was deeply recessed within the right lobe and had to be evacuated and removed from the fundus to the cystic duct. In this dissection it became apparent that the colon and duodenum had been fistulized by the calculus. (Figure 4 & 5) After the gallbladder was removed the common duct was explored, a T-tube was sutured in the common duct and a cholangiogram revealed no calculi and free passage of dye into the duodenum. (Figure 6) The colon fistula was closed in two layers very easily. There was a complete absence of acute inflammation in the colonic wall, but there was a distinct foul odor to the gallstone at the site of the colon perforation. The duodenal fistula was larger and had more inflammatory reaction. Proximal to this, the pylorus was thick walled and narrowed. Because of the prior history of upper gastro-intestinal bleeding and the friability of the duodenum it seemed easier and more feasible to incorporate a pyloroplasty with the closure of the duodenum. Once the colon fistula was indentified, intra-venous antibiotics were started and cultures were taken from the gallbladder and common duct bile. At the conclusion of the operation, the operative site was irrigated with 6 liters of normal saline and 500 ml of saline with added antibiotic. The wound was open packed with iodoform gauze from the fascial wall out. Gram stain of the bile was negative and the cultures grew no bacteria.

The postoperative cholangiogram confirmed the operative cholangiogram and the patient was discharged without tubes or drains and was eating a regular diet.

## Discussion

In 1957, Glenn and Mannix[2] suggested that with progressive inflammation in the gallbladder, serosal inflammation leads eventually to adhesions with nearby organs (duodenum, colon, stomach and common bile duct). With a stone impacted in the gallbladder during an episode of acute cholecystitis there might well follow a decrease in blood supply to an area of the gallbladder wall with subsequent decrease in both venous and lymphatic drainage. Increased intraluminal pressure, ischemia and eventual gangrene of the wall can result in perforation of the stone into the adherent hollow viscus. Safaie-Shriazi, Zike and Printen[3] record an incidence of three patients per year at the University of Iowa Hospital. They emphasize that these represent the end result of failure to diagnose properly or treat cholecystitis and cholelithiasis.

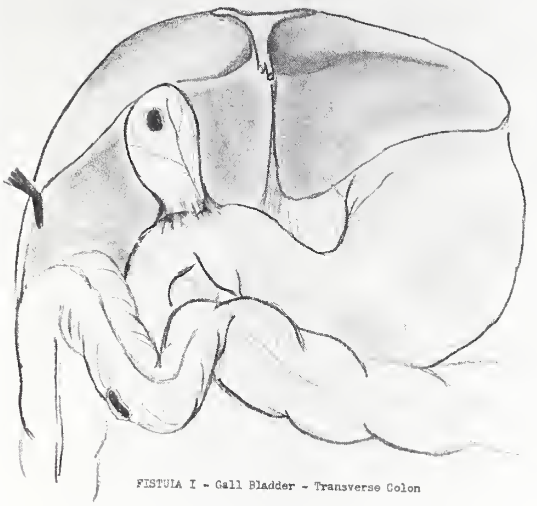


Figure 4
Openings in gallbladder and colon as reproduced by the artist.

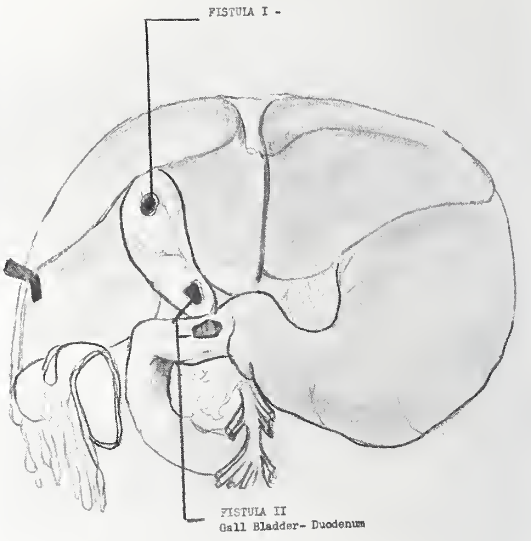


Figure 5
Openings in the gallbladder and duodenum as reproduced by the artist.

Uncommonly, fistulas may extend to rather remote sites (pericardium, ovary, vagina, bladder and uterus).[4] Obstruction in the intestinal tract by the calculus is a well recognized clinical problem, occuring most frequently in the small bowel, but also reported in the large bowel.[5] Ascending cholangitis results from distal biliary obstruction and it is somewhat surprising that this is found infrequently, despite positive cultures of the bile. Wolloch, Glanz and Dintsman[6] report eight cholecystocolic fistulas with positive bile cultures and no ascending cholangitis.

The extent of the operative procedures performed will be decided by several factors. Most important will be the general condition of the patient, pre-existent disease and the location and associated complications of the fistula or fistulas. In general, proximal fistulas pose more severe operative risks[7], thus, in patients with complete intestinal obstruction, relief of the obstruction and no direct approach to the fistula is often selected. Definitive surgery can be performed later if the risks warrant it, remembering that one third of patients remain in jeopardy of further complications. In our patient, exploration revealed the colon fistula first and only then was the duodenal fistula found. The common duct exploration and insertion of the T-tube may have been obviated by a cholangiogram, but the induration and duodenal fixation made us anxious to completely secure the area and provide reliable drainage.

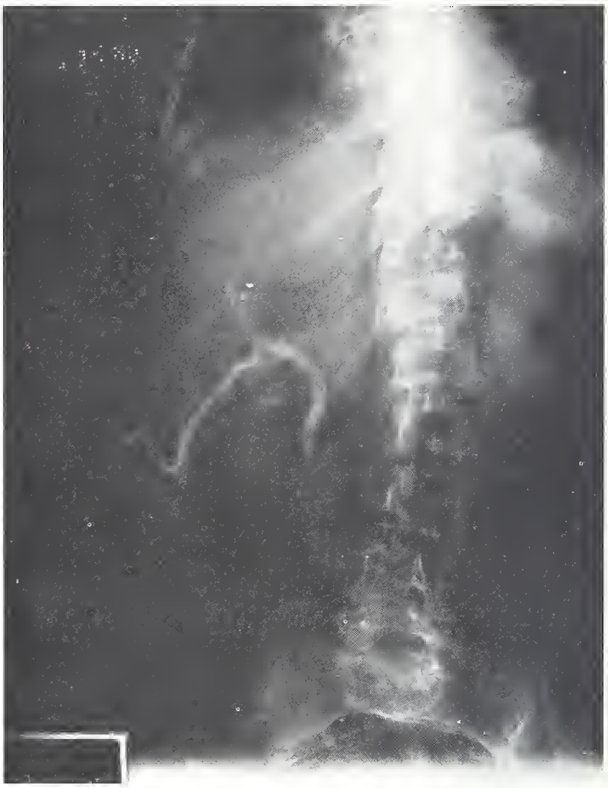


Figure 6
T-Tube cholangiogram demonstrates free passage of dye and normal caliber common duct.

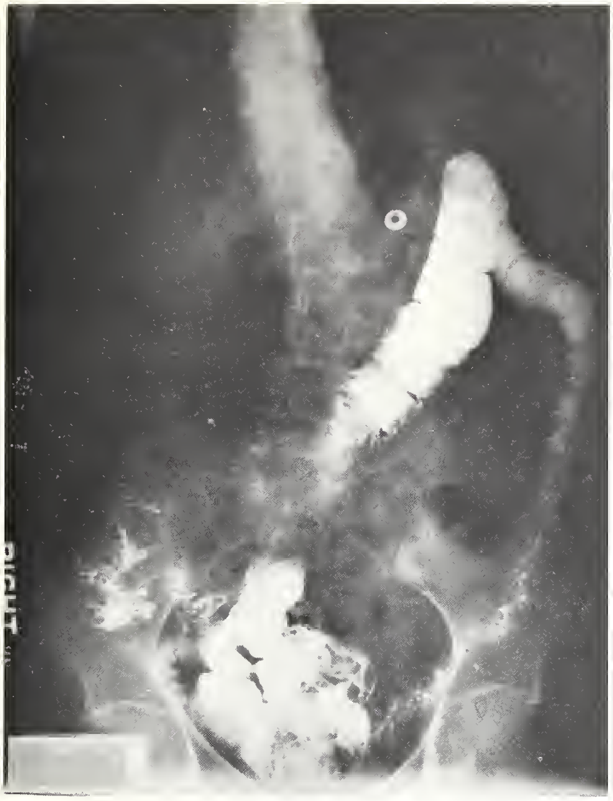


Figure 7
Following surgery review of post evacuation films revealed the passage of barium through the fistula into the gallbladder.

## Summary

1. Review of the literature reveals an incidence of approximately 4:1000 of biliary-enteric fistulas among patients having biliary tract operations.[7] Dual biliary-enteric fistulas are most unusual.

2. Radiographic studies and operative exploration are the only reliable tools we have to establish the diagnosis since the symptoms are non-specific except when obstruction or massive bleeding occurs. Retrospective review of our films revealed the cholecysto-colic fistula on barium enema. (Figure 7)

3. All the studies reviewed agree that biliary tract complications increase in complexity and frequency when elective cholecystectomy has not been performed following the discovery of stones. Until chemical means can safely dissolve or prevent the formation of gallstones, it seems prudent to perform elective surgery when the patient's clinical condition permits.

## REFERENCES

1. Zwemer F L, Coffin-Kroart, V Elizabeth, Conway Michael J, Biliary Enteric Fistulas. Am J Surg 138:301, 1979
2. Glenn F, and Mannix H Jr; Biliary Enteric Fistula. Surg Gynecology & Obstetrics 105:693, 1957
3. Safaie-Shirazi Siroos, Zike Wilbur L, and Printen Kenneth J; Spontaneous Enterobiliary Fistulas. Surg Gynecology & Obstetrics 137:769, 1973
4. Porter John M, Mullen Donald C, Silver Donald; Spontaneous biliary-enteric fistulas. Surgery 68:591, 1969
5. Stull James R, Thomford Neil R; Biliary Intestinal Fistula. Am J Surg 120:27, 1970
6. Wollock, Y, Glanz Irena, Dintsman Moshe; Spontaneous Biliary-Enteric Fistulas. Am J Surg 131:680, 1976
7. Haff Roderick C, Wise Leslie, Ballinger Walter F; Biliary-Enteric Fistulas. Surg Gynecology & Obstetrics 131:84, 1971

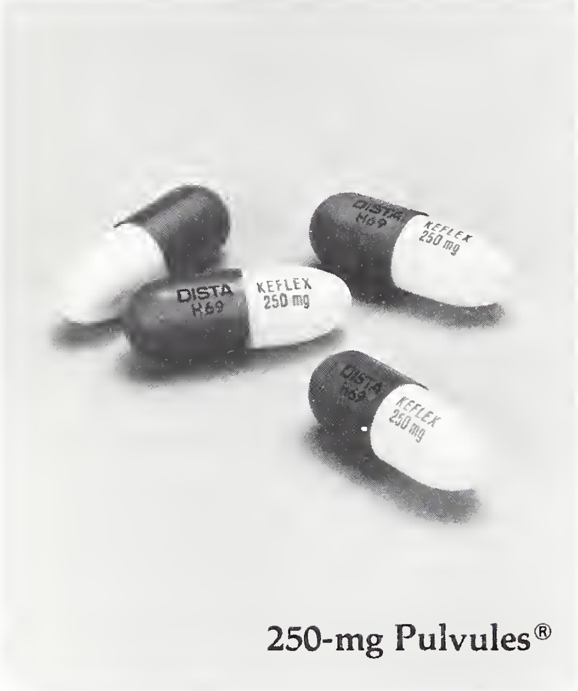
---

## SOME HEREDITARY CANCERS OF MAN

I. Hereditary neoplasms
  1. Retinoblastoma
  2. Multiple polyps of colon
  3. Gardner's syndrome
  4. Chemodectoma
  5. Pheochromocytoma and thyroid cancer
II. Preneoplastic states
  1. Nodularity syndromes
    e.g. Neurofibromatosis
    Tuberous sclerosis
  2. Genetic skin disorders
    e.g. Xeroderma pigmentosum
    Albinism
  3. Chromosome breakage disorders
    e.g. Down's syndrome
    Bloom's syndrome
    Fanconi's syndrome
  4. Immune deficiency syndromes
    e.g. Ataxia telangiectasea
    Agammaglobulinemia

—Michael B. Shimkin, M.D., *Science and Cancer,* NIH, 1980.

easy to take



250-mg Pulvules®

Oral Suspension

250 mg/5 ml
100 and 200-ml
sizes

125 mg/5 ml
60, 100, and
200-ml sizes

Pediatric Drops

100 mg/ml
10-ml size

Keflex®
cephalexin

Additional information available
to the profession on request.

DISTA
000823

**Dista Products Company**
Division of Eli Lilly and Company
Indianapolis, Indiana 46285
Mfd. by Eli Lilly Industries, Inc.
Carolina, Puerto Rico 00630

# Women Psychiatrists in Connecticut

KATHARINE HAWLEY MARTIN, M.D., M.P.H., M. JOAN GREEN, M.D., AND JULIANNE D. MINEAR, M.A.

**ABSTRACT—The article reviews the history of the Connecticut Psychiatric Society Committee on Women from 1976 to 1981, its experience and proposals for future directions in exploring the concerns of women psychiatrists and the relationship of psychiatry to problems of women in general.**

**An analysis of data obtained from a survey in April 1979 of all women psychiatrists in Connecticut is presented.**

## Introduction

In 1972 the American Psychiatric Association established a Task Force on Women and gave it the responsibility to explore both the concerns of women psychiatrists and the relationship of psychiatry to problems of women in general. During the following several years this Task Force succeeded in stimulating a great deal of interest in the subject of women in psychiatry and women's problems with psychiatry. A questionnaire was prepared and distributed; regional task forces or committees on women were established, articles on women in psychiatry were presented at the American Psychiatric Association meetings and published in the Journal of the Association. In 1975 the Committee on Women of the American Psychiatric Association was established to continue the work of the Task Force.

In 1976 the Connecticut Psychiatric Society appointed a Committee on Women with the stated purpose of developing a viable and cohesive vehicle through which women psychiatrists could express their opinions and their special needs. In the first two years several meetings were held, culminating in one which offered a panel discussion by three Connecticut women psychiatrists who presented their own personal and professional experiences regarding private practice, hospital and clinic services, administration, teaching and research. Special issues were identified. These included: 1) the need for eradication of sex and race bias in mental health training, research and service delivery systems, 2) the need for women psychiatrists to be active participants at all levels of the decision-making process in the mental health delivery system, 3) the needs of all women in relation to the mental health aspects of control of reproduction and of abortion services, 4) the need for more women psychiatrists in psychiatric departments of medical schools for teaching, research and supervision of women residents. It was estimated that about 20% of the 118 women psychiatrists in Connecticut, both residents and those in practice, had demonstrated interest in the activities of the Committee on Women. Many of these women psychiatrists wanted the Committee to become very active and aggressive about women's issues and the Equal Rights Amendment (ERA).

In July, 1978, the Connecticut Psychiatric Society gave the following charges to the Committee on Women: 1) to organize, 2) to identify special interests, 3) to establish priorities for short and long term projects, 4) to report regularly on its activities to the Council of the Connecticut Psychiatric Society. The Committee was also responsible for communicating and collaborating with the American Psychiatric Association Committee on Women.

## Questionnaire

To carry out these charges, the Committee sent out a questionnaire to all women psychiatrists in Connecticut in order to gather information of a personal and professional nature. This was done in April, 1979. It was apparent to all that the questionnaire could not satisfy everyone's interests and it was evident that the

---

KATHARINE HAWLEY MARTIN, M.D., M.P.H., Private Practice, Watertown, CT.; Attending Staff, Waterbury Hospital Health Center, Waterbury, CT.

M. JOAN GREEN, M.D., Clinical Director, Elmcrest Psychiatric Institute, Portland, CT.; Private Practice, Cromwell, Ct.

JULIANNE D. MINEAR, M.A., Research Director, Elmcrest Psychiatric Institute, Portland. CT.

*The authors are members of the Connecticut Psychiatric Society Committee on Women with Dr. Martin serving as Chairperson 1978-80 and Dr. Green 1980-81.*

questionnaire was not designed as scientifically as it would have been if research funds had been available. Nevertheless, interesting information was obtained and the results of this survey form the major part of this report.

### Methodology

The questionnaire was mailed in April, 1979, to the 118 women psychiatrists in Connecticut who were then in practice or in residency training; some were members of the Connecticut Psychiatric Society, some were non-members. Response rates for CPS members were 58% for psychiatrists in practice and 38% for residents. The response rates for non-CPS members were 16% from psychiatrists in practice and 41% for residents. A profile is drawn from the 55 completed questionnaires representing 47% of the women surveyed. Important differences are noted between psychiatric residents and psychiatrists in practice.

### Personal Data

The mean age of residents is 33 years. Slightly more than half (56%) are married and have at least one child. The mean age of psychiatrists in practice is 45 years. In this group, the majority (70%) are married, 10% are widows, 20% are single or separated. Their average number of children is two.

### Professional Data

Psychiatrists in practice are employed full-time to part-time at a ratio of nearly 3 to 1. The corresponding full-time to part-time ratio for residents is 18 to 1. Over half of both groups work in either the greater Hartford or greater New Haven area. The remaining women psychiatrists are located throughout the state in other urban and in rural areas. The chief area of professional interest for both groups is psychotherapy (84%) either with adults (89%), with adolescents (65%) or with couples (53%). Twenty-five percent of women in practice expressed no such interest.

Both groups seem satisfied with the number of female patients referred to them. More than half the residents reported that 50-75% of their patients are women; two-thirds of the women in practice reported that 70-90% of their patients are women. The main source of referrals are physicians, psychologists and social workers.

Fifty-six percent of women in practice are certified by the American Board of Psychiatry and Neurology. More than half the residents claim no professional affiliations, with only a few citing American Medical Association or American Psychiatric Association membership. In sharp contrast, women in practice claim multiple affiliations with a large number of organizations, notably the American Psychiatric Association, Connecticut Psychiatric Society, American Academy of Child Psychiatry, American Medical Association and American Medical Women's Association.

### Background and Training

For women in practice, the median year for completion of professional training is 1972 (range: 1927-1978) at age 32 years. Thirty-six percent state they had a child born during medical school or residency with some provisions allowed in their training in the way of flexible scheduling or part-time work. Most of these women took off a period of at least six months for child rearing.

Slightly fewer (32%) of the residents in the survey gave birth to children during their training period and claim that no special provisions were allowed. Three residents have interrupted their training for extended periods of time (three to eight years) for child rearing.

Twenty-one percent of respondents state they hold a degree or have special training in disciplines other than medicine. Four women hold a master's degree in Public Health.

Nearly 80% of both groups came from medical schools in which the women were unaware of any special attempts to recruit women. The same 80% were unaware of any special policies for admission of women to their training programs. Approximately 90% of all those surveyed reported there was no special attention given to the psychology of women. They gave overwhelmingly favorable responses when asked if, as women, they had equal support by the training institution, the administration, the senior professional staff and other male residents. The survey indicates that although there are the same or perhaps somewhat fewer women on the senior staffs of training institutions, supervision by a woman is more readily available to current psychiatric residents (80%) than was available to those women psychiatrists now in practice (60%).

### Adequacy of Services

Residents and psychiatrists in practice were asked if the needs of female patients are being adequately met. Are there enough women therapists? Are therapists sensitive to women's needs? Is there adequate crisis intervention for rape victims, counseling for pregnancy and abortions, non-judgmental treatment for lesbians? Residents, for the most part, seem to be particularly aware of and concerned with the perceived inadequacy of attention given to the problems of female patients. Psychiatrists in practice, while recognizing that specific programs for specific problems are inadequate, feel nevertheless, that there are enough women therapists and therapists sensitive to women's needs.

### Present and Future Activities

In the period between July 1978 and May 1980 the Committee on Women held seven meetings, some of which were open to the general membership of the Connecticut Psychiatric Society. Considerable interest was expressed in learning more about the psychology of women and several members of the Committee delved into this topic for their own enlightenment. One meeting featured a panel discussion on "Career Options in Psychiatry" for the particular benefit of residents in psychiatry. A special meeting was devoted to the history and current status of the Equal Rights Amendment. This highlighted the activities of Connecticut's Permanent Commission on the Status of Women. During the course of this two year period, specific areas of concern were identified which provided the Committee with many possible areas of future investigation. Among the issues to be explored in future programs are the current status of women in mental health planning, women in authority, women in administration, academic and institutional opportunities for women, problems of private practice, dual career families, combining career and motherhood, educational programs on the psychology of women.

The Connecticut Psychiatric Society's Committee on Women was represented by two of its members at the American Psychiatric Association's annual meeting in 1980 when a furor was once again raised about the Association's position on the ERA and the question of boycotting states that had not ratified the ERA. It was learned that many District Branches did not have a Committee on Women and that Connecticut's Committee had actually been as active or more active than others. The Committee on Women has become an integral part of the Connecticut Psychiatric Society's activities. An increasing number of Connecticut women psychiatrists have become active on other committees of the Society and on committees of the three local Chapters of the Society.

Despite this increasing interest in women's issues the lack of attendance at an open meeting in November 1981 by both men and women members of the Connecticut Psychiatric Society was disappointing. The program was an educational forum with guest speakers on the ERA and the question of boycotting the Annual Meeting of the American Psychiatric Association in May 1981, scheduled to be held in a nonratified state.

The authors have attempted to present an overview of the activities and interests of women psychiatrists in the state in order to share with our colleagues our concerns and to urge women in all branches of medicine to become more active in their professional organizations. We wish to extend appreciation to the Connecticut Psychiatric Society Council for continued support.

ELMCREST

A COMPREHENSIVE
MENTAL HEALTH TREATMENT CENTER
FOR ADULTS AND ADOLESCENTS

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Allen Cohen**, M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman**, M.D., F.A.P.A.
*Medical Director*
**M. Joan Green**, M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
☐ GERIATRIC GUIDANCE CENTER
☐ DAY HOSPITAL

epi

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

FOR OPTIMUM NUTRITION

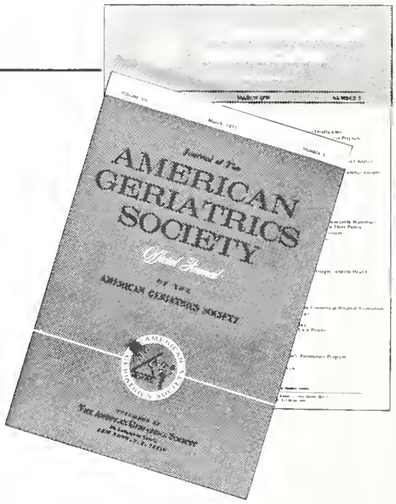
# CEVI-BID

## VITAMIN C MICRO-DIALYSIS SUSTAINED RELEASE

500mg. CAPSULES

## PROVIDES A "MORE SATISFACTORY TREATMENT..."[1]

### HERE'S WHY



**ORDINARY VITAMIN C INTAKE:**
Results in "peaks and valleys"
(wasteful renal excretions at high levels and less than optimum amounts of vitamin C at low levels)
Absorption cf enteric-coated vitamin C tablets is also unpredictable.

> "Through a special micro-dialysis release pattern we find it CEVI-BID far better therapy than tablets for the patient."[2]

**CEVI-BID 500mg CAPSULES:**
Convenient b.i.d. dosage for more predictable sustained vitamin C blood and tissue levels all day and night. No "peaks and valleys."

> "A special advantage of this prolonged absorption period results in the maintenance of blood levels throughout the day and night."[2]

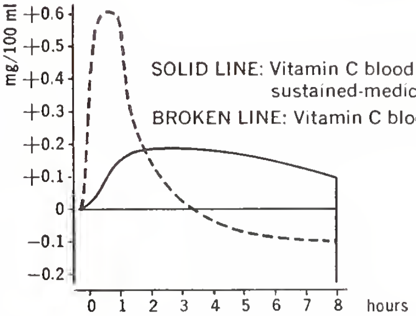
CEVI-BID's unique micro-dialysis principle provides release of 500mg of vitamin C during a 12 hour period AT A SMOOTH, UNIFORM RATE.

> CEVI-BID..."provides a more satisfactory treatment of disorders requiring administration of vitamin C in repeated doses of relatively small amounts."[1]

**WHENEVER VITAMIN C IS INDICATED...PRESCRIBE CEVI-BID**

Dosage: For continuous 24 hour therapy, one capsule after breakfast and one after supper.

**Available Only Through The Medical Profession**



SOLID LINE: Vitamin C blood levels obtained with sustained-medication capsules (CEVI-BID).
BROKEN LINE: Vitamin C blood levels obtained with tablets.

*Comparison of ascorbic acid blood levels after administration of 1 gram of ascorbic acid in effervescent tablet form and 1 gram of CEVI-BID (2 capsules). *Adaptation

Samples on Request

**GERIATRIC PHARMACEUTICAL CORP.**
397 Jericho Turnpike, Floral Park, N.Y. 11001

1. Riccitelli, M.L.: Vitamin C Therapy in Geriatric Practice, J. Amer. Geriatrics Soc. 20:34, 1972.
2. Riccitelli, M.L.: Vitamin C—A Review. Conn. Med. 39:609, 1975

DEVELOPERS AND SUPPLIERS OF GER-O-FOAM • GAYSAL • B-C-BID

# Holistic Medicine

BERNARD S. SIEGEL, M.D.

and

BARBARA H. SIEGEL, B.S.

The integration of the doctor/patient roles into a healing team is to me the true essence of holistic medicine. Awareness, acceptance, and sharing of conscious and unconscious belief systems and therapies (using an open dialogue, in a non-traditional way) are the key factors required to accomplish this integration.

Rejection and resentment must be put aside as both doctor and patient may bring to the relationship modes of therapy unacceptable to the other. Choices, however, are available and a common ground for healing can be found.

Albert Schweitzer has said, "It is our duty to remember at all times and anew that medicine is not only a science, but also the art of letting our own individuality interact with the individuality of the patient." A redefinition of the physician's role must occur for this to happen.

I believe my medical education trained me to be a mechanic and lifesaver. I had to do things to my patients to make them well, and I was failure oriented. Since everyone dies, including physicians, a lifesaver by definition is always a failure. When I began several years ago, to work with exceptional cancer patients, I redefined my roles. I became at different times a healer, teacher, caregiver, or their student. I could now offer a success-oriented shared relationship with the patient. Thus removing the stigma of failure from dying. It became a decision based upon a shared responsibility and participation related to the quality of life rather than quantity. In this interchange those whose lives were threatened were able to teach me the how and why of living. Do we physicians need this teaching? Just look at our health record and suicide rate. Our belief systems may make us feel invulnerable, but the record speaks for itself. We must care for ourselves and heal ourselves before we can care for and heal others. A painful but necessary step. We must learn from our exceptional patients and successful patients, who recover despite great odds. The motto of our exceptional group became, "In the face of uncertainty there is nothing wrong with hope." This statement is taken from the book *Getting Well Again* by Dr. and Mrs. O. Carl Simonton. When I initially began these groups I heard from the patients their needs and their demands. I placed these with the help of others in a cancer patients' bill of rights which says:

> Dear Doctor:
>
> Please don't tell me what I don't have. We both know I came to you to learn if I have cancer. If I know what I have, I know what I am fighting, and there is less to fear. If you hide the name and the facts, you deprive me of the chance to help myself.
>
> Doctor, when you are questioning whether I should be told if I have cancer, I already know. You may feel better if you don't tell me, but your deception hurts me.
>
> Do not tell me how long I have to live. I alone can decide how long I will live. It is my desires, my goals, my values, my strengths, and my will to live that will make the decision.
>
> Teach me and my family about how and why it happened to me. Help me and my family to live now. Tell me about nutrition and my body's needs. Tell me how to handle the knowledge and how my mind and body can work together. Healing comes from within, but I want to combine my strength with yours. If you and I are a team I will live a longer and better life.
>
> Doctor, don't let your negative beliefs, your fears, and your prejudices affect my health. Don't stand in my way of getting well and exceeding your expectations. Give me the chance to be the exception to your statistics.
>
> Teach me about your beliefs and therapies and help me to incorporate them into mine. However, remember that my beliefs are the most important, what I don't believe in won't help me.
>
> You must learn what cancer means to me, death, pain, or fear of the unknown. If my belief system accepts alternative therapy and not recognized therapy, do not desert me. Please try to

---

BERNARD S. SIEGEL, M.D., Assistant Clinical Professor of Surgery, Yale University School of Medicine; Attending Surgeon, Yale New Haven Hospital; Attending Surgeon, Hospital of St. Raphael; Surgical Fellow, American Academy of Pediatrics; Fellow, American College of Surgeons; Diplomate, American Board of Surgery; Member, American Holistic Medical Association; State Representative, Originator, Exceptional Cancer Patients.

BARBARA H. SIEGEL, B.S., Co-originator, Exceptional Cancer Patients.

> convert my beliefs and be patient and await my conversion. It may only come at a time when I am desperately ill and in great need of your therapy.
>
> Doctor, teach me and my family to live with my problem when I am not with you. Take time for our questions and give us your attention when we need it. It is important that I feel free to talk with you and question you. I will live a longer and more meaningful life if you and I can develop a significant relationship. I need you in my life to achieve my new goals.

If we are to step out from behind the desk and share with our patients we must feel secure with ourselves. We must undergo the same examination of our lifestyles that we ask of our patients. For when we become responsible for ourselves and participate in our health we take on a job that most people refuse. When the patient does participate it has been shown he can exceed expectations.

I ask patients to have faith in all modalities. Faith in themselves, their treatment, their physician and their spiritual faith. I believe it is the healing power within the patient that has led to the growth of alternative therapies. The patient, with his strong belief, recovers and the therapy is given the credit. The patient always deserves the credit for healing, not the therapy and not the mechanic. The patient has an intrinsic ability to heal, a machine does not.

In order to understand my patients' beliefs I ask four questions of them. (1) Do you want to live to be 100? A positive response says I am in control of my life and enjoy it. I do not fear the future and I have a will to live. In an audience made up of physicians, fewer than 5% respond positively. A holistic health group will respond positively 100% of the time. A negative response implies a desired guaranty for future well being. Some individuals actually use the illness to die at a young age to avoid the unknown problems of the future or to solve their present problems. (2) What has happened in your life in the year or two prior to the illness? I do not believe it is a coincidence when a major illness strikes an individual. The time factor varies depending upon the illness, but one needs to accept the relationship between lifestyles and illness if one is to participate in one's health. (3) What does the diagnosis mean to you? Once again, the attitude and expectations of the patient have more to do with the outcome of the therapy than the attitude and beliefs of the physician. We must deal with negative expectations, ours and the patient's. Since we do not know the future, we must give the patient the chance to be the exception. Negative statistics can kill, positive emotions can make you well. "If you treat an individual as he is, he will stay that way, but if you treat him as if he were what he could be, he will become what he could be." (Goethe) A patient must be given the belief that he can get well or there is no hope. False hope does not exist in a patient's mind. I have many case histories of individuals who were told that they would be dead in six months, ten or fifteen years ago. Once you know that exceptional things can happen you can offer the chance to be exceptional to all of your patients. Simply giving hope will change the outcome of many illnesses.

I personally utilize my patient's drawings of themselves, their disease, treatment, and body (represented by white blood cells) fighting the disease. Our beliefs are manifested by our dreams and images, not our words. We are trained in verbal communication and, therefore, can easily deceive others verbally. Utilizing other means of communication allows us to deal with the true beliefs, to bring unconscious material to a conscious level, and create a firm basis for healing.

Not every physician needs to be trained in interpreting dreams and images (though it would be an important addition to his armamentarium). A relationship based on trust and sharing will allow this material to eventually come forth. (4) The last question I present is why did you need this illness? What does the illness provide that the patient has not achieved or received through more positive means? Attention, love, control? The possibilities are limitless. On a simple level, do we provide sick days or health days for our employees? We encourage people to get sick when we could encourage them to take time to stay well.

The key to being well is mental health. Mentally well-adjusted individuals have only 10% of the serious illness rate of maladjusted individuals. A holistic physician, by sharing with his patients, must live the sermon not just deliver it. He or she must have goals in his or her life, and must teach de-stressing techniques of regular meditation, exercise and play. We are in control of 90% of the things that shorten our lives.

Perhaps the most rewarding part of this new relationship is the communication which then occurs between doctor and patient. The physician becomes a "privileged listener." (A term coined by my wife to describe this new role.)

The patient reveals all of his intimate and meaningful beliefs knowing they will be heard by an open mind. A closed mind stops healing and does not share the patient's world. I know because I see what has occurred in my practice as I have changed. The patients were always ready to share. I wasn't prepared.

In stepping forward to teach my patients how to live, I learned. As so aptly put by the phrase, "We teach what we want to learn." The exceptional patients have made a believer out of me. I know the will to live. I know what the will to live can achieve.

In medical school I was trained as a scientist to see and then believe. Now I know that one must believe in order to see. An open mind sees. Perhaps this is the key to holism and the acceptance of a healing, therapeutic relationship between doctor and patient.

# Improving Quality Assurance In Hospitals

A.H. LENNE KLOPFER, R.R.A.

During 1980, many hospitals and their medical staffs were preparing to meet the requirements of the Joint Commission on Accreditation of Hospitals (JCAH)—especially the new standard for integrating Quality Assurance activities on a hospital-wide basis.[1] Most hospital administrators and medical staff members studied the standard and many may have attended any of several seminars to clarify the Joint Commission's expectations. Each institution was then faced with the initial problem of writing its own plan—one tailored to its particular needs.

Most Quality Assurance specialists agree that the basic hospital Quality Assurance plan should have at least nine basic components: a statement of purpose, a list of objectives, a statement of authority, a definition of scope, an organization chart, a statement of reporting procedures, documentation of all activities, ongoing evaluations, and a plan for implementation.[2]

A statement of purpose is necessary to identify the governing board's responsibility for developing a system that would demonstrate periodic or continual assessment of quality services with correction of identified deficiencies. The list of objectives is to identify the Quality Assurance plan's specific aims, how they would be achieved, at what level and under what circumstances, while the authority statement is to designate the individual or groups delegated with the responsibility and accountability for implementing the plan.

The purpose of a scope statement is to document that the program will be hospital-wide, comprehensive, and integrated with the hospital's size and complexity determining the program's magnitude. The organizational chart is recommended to graphically show the chain of command for the various people or groups with Quality Assurance responsibilities (hospitals were encouraged to assign these responsibilities to existing audit groups). The plan's sixth element is the report mechanism, including the identification of those responsible for collecting, collating, and distributing data and reports, the time interval between specific reports, allowance for correction recommendations, and provisions for the ongoing monitoring of the program.

Documentation of the overall Quality Assurance activities should be done in a format that could be easily interpreted by hospital and medical staff leaders. This includes periodic evaluations/reports of the results of the corrective actions taken. The plan should also indicate that there will be annual evaluations of the plan to measure its effectiveness and whether the hospital's current situations warrant change.

The final concept necessary to a complete written Quality Assurance plan is a detailed explanation of the plan's implementation, so that transfer of responsibility could occur without disruption of day-to-day activities. This section of the plan should also include a detailed procedure of functional activities for ongoing operation of the Quality Assurance plan.

After almost a year and a half of preparation for Quality Assurance, it has become evident that the hospitals should not be planning Quality Assurance programs simply to satisfy JCAH standards. Rather the impetus behind the programs should be the concept that it is a tool for the hospital to use in meeting its own goals, related to providing quality care to its patient population.

## Risk Management

Another item that has grown in importance is the link between the Quality Assurance and Risk Management activities. Because both these programs require the collection of similar types of data to accomplish their goals, there is growing emphasis that Quality Assurance and Risk Management activities should be coordinated, if not directly tied together. Indeed, close coordination and/or consolidation between the programs is seen as greatly minimizing the duplication of the data-gathering function.

Hospitals have realized that Quality Assurance

---

A.H. LENNE KLOPFER, R.R.A., Registered Record Administrator, director of Connecticut Hospital Information Management and Exchange (CHIME) a statewide clinical data base system for hospitals developed by The Connecticut Hospital Association (CHA). Prior to joining CHA, Mrs. Klopfer was director of the medical record department at the Hospital of St. Raphael in New Haven.

programs are only effective if the amassed information is used—not filed away in documentation manuals. While much has been accomplished as hospitals have begun establishing their Quality Assurance programs during the past year, hospital management teams must still strive to make their Quality Assurance programs cost effective—cost justified and meaningful, responsible and responsive to day-to-day problems. Most important of all, the program must compliment, not disrupt, existing decision-making systems in the hospitals.

To accomplish this goal, Quality Assurance plans should now be revised so that the Quality Assurance program is, in essence, a MANAGEMENT INFORMATION SYSTEM that would provide TIMELY information to clinical and administrative personnel so that they may make informed decisions concerning the delivery of patient care.

The list of objectives should be expanded to include not only improving patient care and insuring compliance with standards and regulations, but also reducing cost, reducing exposure to liability, identifying continuing education needs, improving the documentation of care delivered, making clinical privileging decisions, improving the hospital's image in the community, improving staff morale, and supplying data to make long-range planning decisions.

The plan's authority statement should be revised so that it identifies the authority, responsibilities and organization of a multidisciplinary Quality Assurance Coordinating Group, a Quality Assurance Coordinator, and a Physician Liaison to the medical staff. The scope and organization chart sections should be revised to identify the relationship with Risk Management.

The report mechanism section should necessitate the most extensive revisions. This would require an in-depth study by the Quality Assurance Board to list the data needed to meet the program's goals, the individual/groups that could gather such data and also the new groups/individuals should eventually receive any Quality Assurance/Risk Management information. This study may also identify areas of duplication that should be eliminated.

By expanding the functions of the Quality Assurance Program so that it does become a management information system, the end result should be a cost effective, streamlined, information flow that assists, not shadows the hospital's decision-making process.

## REFERENCES

1. Joint Commission on Accreditation of Hospitals, *Accreditation Manual for Hospitals,* JCAH, Chicago, 151-154, 1981
2. The author acknowledges her gratitude to Dr. Charles R. Morris and his article "A Blue Print for Hospital Wide Quality Assurance," *The Hospital Medical Staff,* December 1980

Advest

**Connecticut's Leading Investment Firm**

**Hartford**
Six Central Row
Hartford, CT 06103
(203) 241-2000

37 Lewis Street
Hartford, CT 06103
(203) 522-5201

**Guilford**
1110 Boston Post Road
Guilford, CT 06437
(203) 457-1550

**Middletown**
50 Riverview Center
Middletown, CT 06457
(203) 347-4491

**New Britain**
30 Bank Street
New Britain, CT 06051
(203) 225-6371

**New Haven**
195 Church Street
New Haven, CT 06510
(203) 777-7356

**New London**
One Union Plaza
New London, CT 06320
(203) 443-2821

**Old Saybrook**
263 Main Street
Old Saybrook, CT 06475
(203) 388-1223

**39 offices throughout the Northeast.**

**When you invest**

**Advest**

Headquarters: Six Central Row, Hartford, CT 06103
(203) 525-1421 or Toll Free (800) 842-3807

Members of major securities exchanges.

# Endoscopy in Upper GI Bleeding

## SPONSORED BY THE NATIONAL INSTITUTE OF ARTHRITIS, METABOLISM, AND DIGESTIVE DISEASES, NIH

### Introduction

The National Institutes of Health consensus development program brings together biomedical research scientists, practicing physicians, consumers, and others as appropriate, in an effort to reach general agreement on the safety and efficacy of a medical technology. That technology may be a drug, device, or medical or surgical procedure.

Following consensus meetings, summaries of conclusions and recommendations issued by consensus panels are widely distributed to the research, practicing, and lay communities. All shades of opinion are reflected in those summaries.

At NIH, the Office for Medical Applications of Research (OMAR) is responsible for coordination of the consensus development program. OMAR assists the individual NIH institutes, which sponsor the conferences, in this effort.

A National Institutes of Health Consensus Development Conference held at NIH August 20-22, 1980, addressed the issues that have arisen over the use of endoscopy in the management of upper gastrointestinal (GI) bleeding.

At NIH, consensus development conferences bring together biomedical research scientists, practicing physicians, consumers, and others as needed to provide scientific evaluation of a technology and reach general agreement on the safety and effectiveness of that medical technology. The technology may be a drug, device, or medical or surgical procedure.

A Consensus Development Panel and members of the audience considered evidence presented to answer the following questions:

- What are the benefits of endoscopy in upper GI bleeding?
- What is the place of other diagnostic approaches to upper GI bleeding?
- What are the considerations in the decision as to whether to perform endoscopy?
- What are the risks of endoscopy in the bleeding patient?

The members of the Panel included individuals with many of the disciplinary skills involved in the evaluation and treatment of bleeding in the upper gastrointestinal tract. After hearing formal presentations and discussion, the Panel met to assess the issues based on the evidence heard. The results of the Panel's deliberations are presented in the summary which follows.

### Introduction

Upper GI bleeding is a common and serious medical problem. It has been estimated that in the United States each year approximately 115 patients per 100,000 population are hospitalized with episodes of upper GI bleeding. These events lead to approximately 250,000 new hospital admissions per year. The mortality from such bleeding, approximately 10%, has not decreased substantially over the past years in spite of improvement in diagnostic accuracy and innovations in therapy.

Upper GI bleeding presents complex problems in management for a number of reasons: (1) it may occur as an unexpected emergency; hence, diagnostic and therapeutic facilities must be proximally located and available on short notice; (2) clinical signs are imperfect guides to the magnitude of hemorrhage, since they neither signal whether bleeding has stopped, nor indicate what level of cardiovascular reserve remains to compensate for any additional blood loss; (3) patients may require supportive therapy to maintain functional

---

NIH Consensus Development Conference Summary Vol. II

EDITOR'S NOTE: For further information about the "NIH Consensus Development Conference Summaries," contact the Office for Medical Applications of Research, Building 1, Room 216, National Institutes of Health, Bethesda, Maryland 20205.

blood volume and to ensure adequate perfusion of vital organs; (4) supportive therapy and diagnostic evaluation must proceed simultaneously. (In some patients, therapy for hemorrhage can be definitive, e.g., resection of a bleeding gastric ulcer with antrectomy.)

The first step in the management of upper GI bleeding is evaluation of cardiovascular status, i.e., pulse, blood pressure, orthostatic changes, and other physical signs of hypovolemia (low blood volume). If evidence of hypovolemia is found, volume replacement must be prompt and adequate. By history and physical examination, clues that will lead to likely diagnostic candidates should be sought, i.e., physical evidence of liver disease, history of ingestion of aspirin or other drugs, ingestion of anticoagulants, history of dyspepsia, or previous bleeding episodes.

On the basis of this initial evaluation, an estimate as to the severity of the bleeding episode should be developed as well as a plan for the diagnostic procedures that are most likely to provide useful information at minimal risk and discomfort to the patient. One of these procedures, upper GI endoscopy, was the subject of this consensus conference.

Upper GI endoscopy was chosen for consideration because it is a rapidly evolving technology. Its use has increased rapidly in recent years. Questions have been expressed as to whether this technique is being used either too frequently or not enough. In addition, it should be asked whether use of the procedure incurs an expense in excess of that associated with more traditional management, and if so, whether this cost is warranted by improvement in coping with the problems in upper GI bleeding.

It is generally agreed that in the presence of acute upper GI bleeding expertly performed endoscopy appears, in most instances, to offer the best available method for identifying the site of the bleeding lesion. The technology may not be applicable when bleeding is so massive that immediate surgery appears to provide the only hope of saving the patient's life. This consideration should not preclude use of endoscopy in the operating room to aid the surgeon in locating the lesion. In addition, if bleeding is so rapid as to reduce greatly the chance of visualizing the esophagus and esophagogastric junction, the technology may not be applicable and the risk of aspiration in these circumstances is significant. Therefore, endoscopy should be delayed until a more appropriate time.

As in all clinical situations, the primary physician caring for the individual patient with upper GI bleeding has an important role in assessing that patient's needs and candidacy for endoscopy. The decision as to what diagnostic or therapeutic steps to take will, of course, be directed mainly by the patient's immediate clinical status, but may often be modified by the immediate availability of various consultants who are expert in certain diagnostic techniques.

The diagnostic accuracy of endoscopy in gastrointestinal bleeding is dependent upon the skill and experience of the endoscopist and the adequacy of facilities, equipment, and supporting personnel. Individuals with minimal training should be discouraged from performing endoscopy, as lack of experience may lead to diagnostic error, complications, and inappropriate decisions regarding patient care. The best interest of the public, in terms of the quality of care related to endoscopy and its attendant cost, is assured by the application of well-defined professional standards for endoscopy.

Although performing upper GI panendoscopy is difficult in the bleeding patient, the well-trained endoscopist can, in the majority of circumstances, locate the bleeding lesion, and in those cases in which there is more than one potentially bleeding lesion present, identify the one responsible for most of the bleeding.

Before choosing any diagnostic or therapeutic course, the physician must weigh the risks and costs of each procedure against its possible benefits.

### What are the benefits of endoscopy in upper GI bleeding?

Precise determination of location and type of lesion may be of singular value to the surgeon operating upon the patient with upper GI hemorrhage. Since the nature and timing of the surgical procedure is dictated to a major extent by the specific lesion being treated, preoperative knowledge of the exact lesion enhances placement of the appropriate incision, increases the rapidity and smoothness with which the procedure can be accomplished, and averts the need for unnecessary intraoperative maneuvers which might increase morbidity and mortality.

One of the major benefits of precise endoscopic diagnosis is avoidance of an inappropriate operation on the patient who is bleeding from esophageal varices, or perhaps on patients with diffuse erosive gastritis.

Although it seems likely that such improvement in precision of diagnosis will reduce mortality and morbidity resulting from surgery, this has not yet been clearly demonstrated. Carefully controlled studies in this area are urgently needed.

Although the advent of fiberoptic endoscopy has improved the precision with which an accurate diagnosis of the source of upper GI hemorrhage can be made, there is, as yet, no clear evidence that mortality is significantly altered by such information. It is possible that this situation results from our inability to identify specific subsets of patients with upper GI hemorrhage who would benefit from early and specific diagnosis. In addition, definitive and effective therapy for identifiable lesions is not yet fully developed.

Despite a lack of demonstrable improvement in mortality, other somewhat less obvious benefits may derive from specific diagnosis of the bleeding lesion.

The physician can avoid the use of potentially harmful techniques, may discontinue ineffective therapies, or may identify a lesion whose course may be affected by therapy. Counseling of the patient or the family of the patient may be more rational, and a better estimate of long-term prognosis may be possible.

Therapeutic endoscopic methods for control of GI bleeding need to be investigated using large-scale clinical trials. There are several possible methods for coagulating bleeding lesions through endoscopy; these have now reached a suitable state of development, so that the method most likely to be readily and safely adoptable for use by the average endoscopist should now be chosen for randomized comparison with conventional therapy. Uncontrolled use of these modalities should be discouraged until the results of such studies are known.

## What is the place of other diagnostic approaches to upper GI bleeding?

### Contrast radiography

The single contrast upper GI series has been found in comparison studies to be about one half as accurate as endoscopy in identifying upper GI lesions responsible for bleeding. There is evidence that expertly performed double contrast techniques approach the accuracy of endoscopy. Drawbacks of barium studies include obscuring the field for endoscopy, or angiography; complicating surgery; creating difficulty in obtaining an adequate examination in an uncooperative patient; causing inaccuracy of diagnosis in the presence of retained blood clots or dilution of the barium by large amounts of blood or other material in the stomach; and requiring repeated radiation exposure resulting from the numerous studies frequently used.

### Angiography

Angiography is generally not as accurate as endoscopy, and rarely identifies bleeding unless blood loss is 0.5 cc/min or greater. The clearest indication for angiography is a situation in which intra-arterial therapy is likely to be effective. Drug infusion or embolization may be effective for occlusion of varices and stanching bleeding from other lesions.

### Radionuclide scanning

Radionuclide scanning with technetium sulfurcolloid or tagged red blood cells is a promising noninvasive screening technique for the localization of GI bleeding; this requires further evaluation. So far, the use of this method has not been as well demonstrated in patients with upper gastrointestinal bleeding as it has been in subjects with lower tract bleeding.

## What are the considerations in the decision whether to perform endoscopy?

It is important for the physician to assess all relevant clinical factors, including the severity of the hemorrhage, to determine benefits to be expected from having a precise diagnosis for the origin of the bleeding. The utility of this diagnostic information should be weighed against the potential risks of performing endoscopy. While endoscopy is usually the best procedure for identifying the bleeding lesion, it need not automatically be performed in all instances of upper GI bleeding, nor is it required following each episode of repeated bleeding in an individual patient. Differences in the expertise of the locally available specialists in endoscopy and radiography should also be considered in choosing the diagnostic approach. An uncooperative patient is a poor candidate not only for endoscopy but also for most other diagnostic procedures.

There are clinical settings in which bleeding is minor and apparently self-limited, and in which careful prolonged observation is the best course to follow.

Continuous or recurrent bleeding during hospitalization in the absence of a clear-cut diagnosis is usually a relatively strong indication for endoscopy if it has not already been done. Such rebleeding in a patient previously endoscoped but without firm diagnosis should be cause to consider repeating endoscopy.

Endoscopy may be indicated when there is doubt as to the preferred medical or surgical therapy and when improved diagnostic information would be expected to clarify this issue. For example, in patients known to have cirrhosis of the liver with esophageal varices, bleeding episodes are often related to factors other than the varices, such as peptic ulcers or erosive gastritis. It is important to ascertain the exact cause of bleeding, since the therapeutic approach to bleeding varices is completely different from that used to treat other causes of bleeding.

It is very important to identify bleeding from esophageal varices related to extra-hepatic portal hypertension, since the beneficial effects of decompressive surgery are so much more definitive and long-lasting than they are in hepatic cirrhosis. Unexplained upper GI bleeding in the presence of splenomegaly or other physical findings suggesting portal hypertension would prompt a search for varices.

## What are the risks of endoscopy in the bleeding patient?

Although complications are generally rare, they are more common in patients with actual or potential heart, lung, renal, and liver diseases and in patients on immunosuppressive regimens. Patients with any of those conditions must be carefully evaluated beforehand and observed during the endoscopic procedure for hypoxemia, arrhythmia, hypotension, or other untoward events. Resuscitation facilities must be in place where the procedure is performed.

Complications from endoscopy in gastrointestinal hemorrhage when done in an emergency are increased over those to be expected when the procedure is done electively. Aspiration is more common and more serious when endoscopy is performed in the presence of active upper GI bleeding. The most common complications of endoscopy, regardless of the indication for its use, are cardiopulmonary and result from the procedure itself or from premedication. Thrombophlebitis may occur following intravenous medication. Perforations, although rare, occur particularly in the proximal esophagus in the area of the cricopharyngeus. Perforations also occur through Zenker's diverticula and through areas of tumor during or following endoscopic manipulation. Cervical spondylosis sometimes makes endoscopy difficult. Other complications include aggravated bleeding, particularly if a biopsy is performed, and sepsis.

The transmission of infection by endoscopy is extremely rare and is avoidable by appropriate mechanical cleansing and disinfection.

### Prospectus

Endoscopy is an excellent tool for the differential diagnosis of upper GI bleeding. The lack of demonstrated effect on overall mortality, however, strongly suggests that the major current task is to use the diagnostic information gleaned by endoscopy as a stimulus for further vigorous investigations of different and newer therapies for the different lesions causing upper gastrointestinal bleeding.

There is no need for a standardized coding system for diagnosis and services rendered so that adequate data for planning resource commitment to the problem of gastrointestinal hemorrhage can be made on a rational basis. Physicians should specify upper GI bleeding as the reason for hospitalization, if that be the case, in addition to any other indicated diagnoses.

### Financial Implications

In spite of the increased diagnostic accuracy of endoscopy, its high cost is an impediment to abandoning contrast radiography for the conventional investigation of acute upper GI hemorrhage. This is especially true since the increased diagnostic information obtained from endoscopy has not resulted in definitively improving mortality. Charges for GI endoscopy vary considerably across the country. The Panel urges those doing endoscopy to closely examine their costs and fees to help cost containment for this procedure.

*This Consensus Development Conference on The Role of Endoscopy in Upper Gastrointestinal Bleeding was sponsored by the National Institute of Arthritis, Metabolism, and Digestive Diseases, NIH, in conjunction with the National Center for Health Care Technology, and assisted by the Office for Medical Applications of Research.*

Members of the Consensus Development Panel were: Sherman M. Mellinkoff, M.D. (Chairman), University of California at Los Angeles School of Medicine, Los Angeles, California; William R. Best, M.D., University of Illinois Hospital, Chicago, Illinois; Wilma Diner, M.D., University of Arkansas for Medical Sciences, Little Rock, Arkansas; Faith Fitzgerald, M.D., University of Michigan, Ann Arbor, Michigan; James A. Fry, M.D., Western Clinic, Tacoma, Washington; Thomas R. Hendrix, M.D., The Johns Hopkins University School of Medicine, Baltimore, Maryland; Benjamin M. Kagan, M.D., Cedars Sinai Medical Center/UCLA, Los Angeles, California; Louis Lazar, M.D., Millard Fillmore Hospital, Buffalo, New York; Paul Sherlock, M.D., Cornell University Medical College and Memorial Sloan-Kettering Cancer Center, New York, New York; William Silen, M.D., Harvard Medical School and Beth Israel Hospital, Boston, Massachusetts.

The program coordinator for this Consensus Development Conference was: Harold P. Roth, M.D., National Institute of Arthritis, Metabolism, and Digestive Diseases, National Institutes of Health, Bethesda, Maryland.

# Medical Students' Abstracts

UNIVERSITY OF CONNECTICUT

## Structural Analysis of Membrane Proteins Using High Pressure Liquid Chromatography

FRANCIS S. HEINEMANN

Membrane proteins are responsible for many medically relevant biological activities including 1) cell-cell interactions important in morphogenesis, neoplasia, and immunologic recognition, 2) receptor binding of hormones and neurotransmitters, 3) the generation and utilization of ion gradients. A rational approach to medical intervention in these processes requires a detailed understanding of the molecular mechanisms involved. This level of understanding is in turn dependent on knowledge of the primary structure of the membrane proteins involved. The determination of the amino acid arrangements in membrane proteins has been severely limited by the lack of effective chromatographic techniques for the separation of hydrophobic polypeptides. Therefore, the purpose of the present work has been the evaluation and development of reverse phase high pressure liquid chromatography (HPLC) as a method for the structural analysis of integral membrane proteins.

Four mammalian species of cytochrome $b_{-5}$, a membrane bound hemoprotein isolated from hepatic microsomes, were used as model membrane proteins. The purified cytochromes were fragmented by proteolysis with trypsin, chymotrypsin, and pepsin. The proteolytic digests were analyzed by HPLC on an octadecylsilane column (0.39 × 30 cm). Gradient elution of the peptides was achieved at a flow rate of 1.0 ml/min using potassium phosphate buffer as the weak solvent and acetonitrile as the strong solvent. The pH and salt concentration of the aqueous solvent has varied in order to study the role of these parameters in peptide chromatography. The UV absorbance of the HPLC effluent was monitored at 214 nm and 280 nm. Peaks were analyzed by amino acid composition.

Peptides accounting for the entire protein were recovered from each proteolytic digest. By varying the pH and ionic strength of the aqueous solvent, optimal conditions were found for the resolution of peptides from each cytochrome species. Most digests were completely resolved in less than 45 minutes.

Peptides eluted from the column in order of increasing hydrophobicity. Polar peptides were eluted with 10-30% acetonitrile, but elution of the 44 residue hydrophobic membranous segment required 70% acetonitrile. Peptides eluting together were separated easily by rechromatography under different conditions.

Changes in the pH of the aqueous solvent had the greatest effect on peptide resolution. The use of several species of cytochrome allowed the comparison of structurally similar peptides. In general, a single amino acid difference was sufficient for complete resolution of two peptides. Detection by UV absorbance at 214 nm makes this method sensitive to 10 nanograms of cytochrome $b_{-5}$ digest. The method can also be used preparatively, and milligram quantities are separated with no loss of resolution. Simultaneous monitoring at 280 nm permits the immediate identification of peptides containing aromatic amino acids.

The yields of peptides, based on the amount of peptide chromatographed, ranged from 90% for the very polar peptides to 40% for the large hydrophobic membranous segment. The yield of some peptides was significantly increased by increasing the ionic strength of the aqueous solvent.

The method described here has been successfully used to determine the amino acid sequence of rat cytochrome $b_{-5}$, a structure previously unknown, and to compare different forms of cytochrome P-450 by peptide mapping of their tryptic digests. HPLC should have great value in the structural analysis of other membrane proteins as well.

I thank Dr. Juris Ozols for counsel in the course of this research and for making his laboratory available for these studies.

---

Class of 1982. Sponsor: J. Ozols, UConn., Department of Biochemistry.

*Supported in part by an American Liver Foundation Student Research Award.*

# Non-Random Human Chromosome Segregation in Human-Mouse Myeloma Cell Hybrids

PATRICIA C. REARDON

Creation of stable interspecific hybrid cell lines which produce human immunoglobulins would allow study of the synthesis, assembly and secretion of human immunoglobulins, as well as the control of these processes. Verification of establishment of interspecific hybrids is both by the presence in the karyotypes of Chromosomes from both species as well as by the expression of species-specific cellular traits from both parental lines.

In mouse-human hybrids, the human chromosomes are usually preferentially lost during post-hybridization cellular divisions. The mechanisms for this preferential loss are not fully understood. Early studies (Matsuya and Greene, *Science* 163:697, 1969; Nabholz, Miggiano and Bodner, *Nature, Lond* 223: 358, 1969) suggested that this loss is random. Subsequent work (Douglas, Gee and Hamerton, *Nobel Symp* 23:270, 1973; Norum and Migeon, *Nature, Lond* 251:72, 1974; Ruddle and Creagan, *Ann Rev Genet* 9:407, 1975; Rushton, *Cytogenic Cell Genet* 17:243, 1976) provided evidence for non-random loss. In view of these inconsistencies, we applied quantitative and statistical procedures to the analysis of human chromosome retention and loss from a large number of hybrids obtained from human-mouse myeloma fusions.

BUdR-resistant mouse myeloma lines: DR21-20D2 and DR21-40B5, which have lost the ability to produce immunoglobulins, were used for the hybridization. Bone marrow from myeloma patients was obtained with prior informed consent, at the time of routine diagnostic studies. RBC's were lysed and nucleated cells were fused to mouse myeloma cells according to the method of Margulies, Kuehl and Scharff (*Cell* 8:405, 1976a) with the exception that polyethyleneglycol 1000 (PEG) was used as treatment of both parental cell populations during the hybridization (Gefter, Margulies and Scharff, *Somatic Cell Genet* 95:14, 1965). Hybrids were selected in HAT medium with Littlefield's method (*Biochem Biophys Acta* 95:14, 1965). After hybrids were grown to mass culture, aliquots were frozen in 90% FCS + 10% DMSO and the remainder kept in continuous culture in DME + 15% horse serum + 10% NCTC (Gibco). Cultures were incubated in $2 \times 10^{-4}$ *u*g/ml Colcemid for forty-five minutes prior to harvesting for chromosomes. Pre-warmed (37°C) 0.075M KCl was added for 10-20 minutes followed by three fixative (3:1 methanol to glacial acetic acid) rinses. Giemsa banding was done according to a modification of Klinger (*Cytogenet* 11:424, 1971). Metaphases were selected for good overall banding quality and scored for presence of human chromosomes, which were recorded in tabular form. Suitable metaphases were photographed using SO115 film.

Over fifty presumably independent clones were obtained from eight different patients (manuscript in preparation). Some of these lines were found to be stable up to eighteen months and were capable of freezing and later thawing without loss of immunoglobulin production. Human isoenzymes have been detected by biochemical and histochemical methods and twenty-five lines from five different hybridizations were karyotyped, ten of these sequentially at different intervals for a period of up to eighteen months. Non-random patterns of human chromosome segregation were noted. The average number of human chromosomes present after growth to mass culture some thirty generations after fusion was seven in most lines, with a range of one to twenty. Chromosome #4 is uniformly absent, while #12 is almost always present. Also, each clone has its own specific human chromosome complement: line P3B10 had #'s 5, 6 and X; P2A4 displayed #7; C1E12 contained #'s 17 and 21; and the #'s 6 and 8 were found in line P1D11. The observed frequency distribution was found to be inconsistent with the assumption of random segregation, since the $X^2$ goodness of fit statistic (using six intervals) was significant at the .01 level ($X^2 = 154.7$; df = 5). Chromosomes #4 and #16 appear less frequently than would be expected under the assumption of random segregation while chromosomes #6,7,8 and 12 appear more frequently. With extensive culturing, an artifactual "gain" in human chromosomes was seen in several lines, in that early studies of the lines did not show certain chromosomes that appeared in later studies. This most probably represents sampling from heterogenous early lines that, later, with loss of less stable subclones, contained a larger proportion of cells with a slightly altered chromosome complement as compared to early hybrids. Once hybrids are grown to mass culture with the initial extensive human chromosome loss, the lines became relatively stable with few losses over an additional eight to twelve months.

Chromosome abberations have frequently been associated with multiple myeloma. However, no consistent marker pattern has been seen. Prior to banding, a large acrocentric marker was described (Houston, Ritzman and Levin, *Blood* 29:214, 1967). Since banding a 14q+ has been noted by a number of markers (Wurster-Hill, McIntyre, Cornwell and Maurer, *Lancet* 2:1031, 1973; Philip and Drivsholm, *Blood* 47, 1976; Liang, Hopper and Rowely, *Cancer* 44:630, 1979). The origin of the extra material on the #14 is

---

Class of 1982. Sponsors: W. Cieplinski, Div. of Oncology, Newington, VA Medical Center and M. Testa, UCON., Dept. of Research in Health Education.

presently unknown. We unfortunately were unable to karyotype our human parental lines prior to hybridization. Three lines contained markers in their early hybrids. Two lines were derived from one patient, P1D11 and P3B10, while C1E12 was derived from a second patient. In C1E12, four of twenty cells from early hybrids contained: t(11:17) (11qter→11p15::17q21-17qter). Four of twelve cells of P3B10 contained t(11;?)(11qter→11p?14::?).Two of four cells of P1D11 contained another marker: t(11;?) (11qter→11p?14::?) The other chromosomes involved in the latter two markers could not be determined. When these lines were karyotyped after six months in continuous cell suspension culture, markers were lost from all but P3B10, which contained the original marker in seven of twenty-four cells. We were unable to detect a marker #14 in any line. Because parental karyotypes are unavailable, it is not possible to determine whether these chromosome #11 markers were transmitted from human parental myeloma cells or are fusion-related translocations. Nevertheless, Philip and Drivsholm (*Blood* 47:67, 1976), noted an extra #11 in all bone marrow metaphases from one myeloma patient, and in eight of twenty-two metaphases from another patient. These markers are under further study in our laboratory.

---

# A Study of the Control of Hemoglobin Synthesis in Newt Erythropoiesis

LOUIS A. KOWALSKI

The synthesis of hemoglobin during red blood cell (RBC) development is the major expression of differentiation. Transcriptional, post-transcriptional, or translational mechanisms within the developing cells may be implicated in regulation of the synthesis of this cell-specific protein. The purpose of these studies was to define the extent to which any of these probable regulatory mechanisms are involved in newt (*T. cristatus*) erythropoiesis.

The cellular rate of hemoglobin synthesis in newt RBC development is maximal in the early developmental stages and declines sharply in subsequent stages. In late stages, the rate of Hb synthesis is almost 5-fold lower than that observed in early cells. Since this declining cellular capacity for Hb synthesis parallels declines in cellular RNA synthesis and content, we have examined several phenomena which may be correlated with regulation of Hb synthesis: the proportion of ribosomes occurring as polysomes, i.e., as functional units of translation; the relative amounts of cytoplasmic globin mRNA, and, the extent to which this mRNA is polyadenylated in the various developmental stages.

The concentration of polysomes relative to monosomes was highest in the early developmental stages, approximately 65% of the ribosomes sedimenting as polysomes in sucrose density gradients. With maturation, the proportion of ribosomes occurring as polysomes decreased; in intermediate stages, 50% of total ribosomes were found as polysomes while, in late stages, only 30% of the ribosomes were in polysomes. As polysomal concentration decreased, more of the ribosomes were found as monosomes. The ever-increasing concentration of monosomes relative to polysomes could result from decreasing availability of globin mRNA. Quantitative levels of globin mRNA in the various developmental stages were measured indirectly by hybridization of $^3$H-polyuridylate (poly U) to the polyadenylate tract located on the 3′-terminus of mRNA. The highest level of binding was seen in the early stages; the amount of hybridizable poly A decreased by 30% in intermediate stages and by 50% in late stages, suggesting that maturation is associated with decreasing levels of cytoplasmic mRNA. This decrease in mRNA amount parallels a decreasing polysomal/ monosomal ratio, both of which may be directly related to the declining rate of hemoglobin synthesis observed during RBC development.

Although the exact function of mRNA associated poly A is not established, its potential role in stabilizing mRNA has been reported (Doel, 1976). In newt cells where poly A is decreasing, this phenomenon may represent a mechanism leading to decreasing levels of mRNA. It has been shown that the polyadenylic acid tract at the 3′ terminus of mRNA shortens with time in cultured mammalian cells. The size distribution of poly A tracts of mRNA from the various stages of newt RBC development was examined. The length of poly A tract was heterogenous in the basophilic erythroblast, ranging from 138 to 34 residues with a mean size of about 66 residues. The size distribution remained unchanged in the next two successive stages; in the late polychromatic erythroblast stage, the poly A tracts were relatively short, falling into a mean size of 30-40 residues. These results, showing a decrease in the relative amount of cytoplasmic mRNA, a heterogenous poly A tract size distribution with a trend toward decreasing length with development, a decreasing polysomal to monosomal ratio, and a decreasing rate of Hb synthesis, suggest that the control of this specialized protein may be a function of the following transcriptional and post-transcriptional events:

1. Declining cellular content of globin mRNA during RBC maturation which is reflected in a decrease in polysomes and a concomitant increase in monosomes.

---

Class of 1983. Sponsor: J. Grasso, UConn., Department of Anatomy.

2. A potential decrease in functional efficiency of globin mRNA through shortening of the poly A segment.

Present studies are directed towards more conclusive analysis of the relationship of these events to regulation of Hb production.

REFERENCES

Doel MT and Carey NH: *Cell* 8:51, 1976

---

# Studies of Streptococcal Cell Wall-Induced Arthritis in Rats

DAVID S. SCHRUMP*

The concept that cellular immunity is involved in the pathogenesis of rheumatoid arthritis is well supported (Maini, Glass, and Scott, 1978); however to date there has been no clearly defined immunopathogenic mechanism associated with this disease. Although several types of microbial induced inflammatory arthritis occur in both animals and humans, a microbial etiology for rheumatoid arthritis remains obscure.

In 1977, Cromartie *et al.* demonstrated that a single intraperitoneal injection of sterile, sonically disrupted Group A streptococcal cell walls can produce a progressively destructive chronic polyarthritis in rats that is quite similar to rheumatoid arthritis. The cell wall component responsible for the experimentally induced lesions is the peptidogylcan-C-polysaccharide complex (Hadler, 1976). Peptidoglycan has a number of biologic and immunologic effects of potential relevance which are reviewed by Heymer and Rietschel, 1977.

Examination of the Cromartie model of streptococcal cell wall induced arthritis has been underway in this laboratory for the past several years. Major efforts have been devoted to the refinement of the rat arthritis model with initial attempts at characterizing the minimal effective fragment and its mechanism of action.

A difference was observed in the clinical course of arthritis in female inbred Lewis rats injected with streptococcal cell wall sonicate (CWS) 50 mg IP according to the Cromartie model and those injected with 1 mg IV of streptococcal cell wall peptidogylcan (formamide extracted wall to removed group-specific carbohydrate to 1.8% purity). Both groups were given a second identical injection at 9 days in this experiment, subsequently found to be unnecessary. Acute toxicity was observed in both groups. the IV peptidogylcan group had acute severe arthritis which faded out at a month and did not recur; the IP cell wall sonicate group had a gradually worsening course over a month.

Phage lysin extract of streptococcal cell walls, comparatively easier to prepare than CWS, was injected into untreated Lewis rats at doses of 50 mg and 20 mg IP, and 2 mg IV. The 50 mg IP group was given a second injection of 20 mg IP at 1 week. These rats showed neither toxicity nor arthritis.

An attempt was made to enhance the development of arthritis by giving a presensitizing dose. CWS 1.75 mg in incomplete Freund's adjuvant was given intradermally to a group of rats and followed in 2 wks with CWS 20 mg IP. In other groups, doses of CWS of 15 and 30 mg IP were given and followed in 1 week by an injection of 20 mg IP. None of these rats developed arthritis. However, the standard 50 mp IP group also reacted disappointingly. Acute toxicity was severe and arthritis did not develop during a month of observation.

The ability of peptidoglycan complexes to induce an arthritic rather than a toxic state in rats appears to be related to the size of the injected fragments. Following recentrifugation, the same CWS that had been used in the adjuvant trial was injected into a new set of Lewis rats. No toxicity was observed. Mild arthritis appeared 2 days after injection. The arthritis score returned to 0 by 7 days and arthritis was apparent again between 10-14 days after which it steadily increased over a period of weeks remaining very severe for 4 months following the single injection. During this experiment 20 mg IP was found to be as effective as 40 mp IP in inducing severe chronic arthritis. IV doses of 5 mg and 2 mg gave mild arthritis (maximum score of 4) which fluctuated over a period of weeks.

Histology of arthritic joints at 3 weeks after injection showed marked synovitis with polymorphonuclear and mononuclear cell infiltration. Bacterial stains and cultures and mycoplasma cultures were negative.

An initial attempt at passive transfer of arthritis was made. Ficoll-hypaque separated heart blood mononuclear cell and spleen and popliteal lymph node cells were pooled from 4 arthritic rats. The total yield of cells was deemed sufficient for injection of only 2 normal rats for consideration of passive transfer. Peritoneal macrophages from the 4 arthritic animals were separately injected into 2 other normal rats. No passive transfer of arthritis was seen in this small-scale preliminary experiment.

The most recent data are encouraging since they imply that continued refinement of the rat arthritis model may soon enable the characterization of the actual peptidoglycan subunit that initiates the inflammatory process. Preliminary attempts at characterization of the injected complexes have been hampered by the high degree of insolubility of the peptidogylcan fragments. Work is currently continuing in this crucial area. Furthermore, it is anticipated that improved isolation and purification of the arthritogenic fragment shall permit continued dose reduction to more conceivably physiologic levels.

The rapid deposition of microbial fragments in the

---

Class of 1983. Sponsors: S.J. Korn, M.D., J.B. Zabriskie, M.D., The Rockefeller University

* Summer Student Fellow, New York Arthritis Foundation

synovial tissue of the rat following intraperitoneal injection of sonicated streptococcal cell walls is suggestive of a receptor-mediated localization mechanism. Furthermore, whereas the low level arthritis observed in the most recent trial may be attributed to direct inflammatory effect of the material, the secondary enhancement of disease at 10-14 days and the prolonged chronic course as well as the histological preparations are suggestive of a cell-mediated immune response. The production of arthritis in normal rats via cell transfer from arthritic rats would serve to support the notion of an immunopathogenic mechanism mediating this experimental arthritis, and further cell transfer experiments are currently underway.

The ability to ultimately demonstrate a streptococcal antigen receptor on human synovial tissue may provide insight to possible mechanisms by which an infectious or ubiquitous agent might produce a chronic inflammatory condition. In genetically predisposed individuals, exposure to bacteria through infection of normal flora may result in the localization of cell wall fragments in the synovial tissue which by interaction with HLA-like determinants may induce the sensitization of lymphocytes to the synovial cells thus precipitating an autoimmune response. This particular issue is currently receiving extensive investigation in this laboratory.

### REFERENCES

1. Cromartie W, Craddock W, Schwab J, Anderle S, Yang C: Arthritis in Rats after Systemic Injection of Streptococcal Cells or Cell Walls. *Jour Exp Med,* 146:1585-1602, 1977
2. Hadler N: A Pathogenic Model for Erosive Synovitis. Lessons from Animal Arthritides. *Arth and Rheu*, 19:256-266, 1976
3. Heymer B and Rietschel E: Biological Properties of Peptidoglycans. *Microbiology*, 344-349, 1977
4. Maini R, Glass D, Scott J: Immunology of the Rheumatic Diseases. Aspects of Autoimmunity. *Cur Topics in Immun,* 7. J. Turk (ed), Williams and Wilkins, Baltimore, 1977

## Stimulated Migration of Human Polymorphonuclear Leukocytes (PMNs) Under Agarose: Comparison of Radial and Directed Chemotactic and Chemokinetic Responses

### HELEN D. TRAMPOSCH

PMNs will undergo directed migration beneath agarose towards a point source of stimulus but migrate radially when stimulus concentration is uniform throughout the gel. To determine how directed and radial responses are related and should be categorized, we studied responses to different classes and concentrations of stimuli and distinguished chemotaxis from chemokinesis by morphology and velocity of leading edge cells. Migration stimuli were bovine serum albumin (BSA) alone, horse serum (HS) alone, and F-met-leu-phe (FMLP) alone and with BSA or HS. Peak velocities and final distances correlated with the concentration of stimulus in the directed and radial systems. Radial responses to increasing concentrations of FMLP showed stimulation followed by specific and the non-specific deactivation. Peak velocities for radial and directed migration were greatest for migration stimulated by optimal concentrations of FMLP plus BSA or HS and lower for FMLP, BSA, or HS alone. Responses to FMLP were inhibited by preincubation of PMNs with the chloromethyl ketone protease inhibitor TPCK but not by its congener TLCK. These results suggest that radial migration can reflect both chemotactic and chemokinetic responses of PMNs and that FMLP responses may require creation of local chemical gradients by proteolytic degradation of the stimulus.

---

Class of 1983. Sponsor: N.E. Hyslop, Jr., Massachusetts General Hospital and Harvard Medical School

*Supported by NIH: AI14010*

## Stimulation of Rabbit Neutrophils Alters the Morphology and Associated Proteins of the Cytoskeletal Filamentous Matrix

### DEBRA J. WILLIAMS

In order to elucidate the relationship of major membrane proteins to the underlying cytoskeleton, rabbit neutrophils were extracted with Triton under conditions which leave an insoluble filamentous matrix containing condensed nuclear material, 100 Å filaments and microfilaments. The latter approximate their known cellular distribution. Matrices from cells stimulated briefly with chemotactic peptides contained more filaments and microtubules in a disorganized matrix. Matrices from degranulated cells were very disorganized and contained few filaments. The matrices and purified membranes were analyzed by sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) and glycoproteins identified by gel overlay with $^{125}$I-Concanavalin A (Con A). A protein with an apparent molecular weight of 140,000 D was found to be the major membrane protein and the major Con A binding protein of the rabbit neutrophil. Most of the membrane glycoproteins including the 140,000 protein were found not to be associated with the Triton insoluble matrices. However Con A pretreatment of the neutrophils led to a selective enrichment of the 140,000 protein in the isolated matrices. This suggests that Con A stimulation of neutrophils can directly or indirectly link the 140,000 D protein to the underlying cytoskeleton.

---

Class of 1984. Sponsor: E.L. Becker, UConn., Dept. of Pathology

*Supported by AI 09648*

# Brain Death: A Political Process

LOUIS P. BERTONAZZI

From the point of view of a legislator, the remarks of Morris Abram, Chairman of the President's Committee for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, were familiar as he assessed the chances of his Committee's adopting a recommendation in favor of a brain death statute.

The former president of Brandeis, now a New York attorney, anticipated that drafting a uniform definition based on brain death offered no major problems "because the American Medical Association and the American Bar Association already support such a definition . . . . and because religious groups are not united on the subject. It is not likely that those who oppose brain death as a legal standard will be powerful enough to cause sustained problems."

These remarks are not so familiar in their substance as in their form. That is, the issue of brain death legislation is approached not by its merits or demerits, but by the political realities which develop around it generally, and, particularly, the number and relative political impact and level of investment of specific interest groups which have some sort of stake in the issue.

It is apparent that in Mr. Abram's assessment, the American Medical Association and the American Bar Association have established themselves as "owners" of the brain death issue by virtue of their definitive positions, while organized religions, since even within specific entities opinions regarding the issue differ, cannot claim a clear ascendency or unity of approach regarding legislative or other deliberative bodies.

Such a phenomenon regarding issues of public import is not in itself unusual in the legislative arena. That such a phenomenon of interest groups laying claim to ownership or ascendency of particular issues can occur, however, is generally not understood by outsiders to the political process, who assume that all matters are fueled by public concern and interest, and proceed on their merits in the legislative process through rational advancement to logical conclusions reflective of public consensus.

In fact, nothing could be further from the case. The heart of the legislative process, as the heart of politics, is the resolution of conflict, and conflict is consistently colored by emotions.

What Mr. Abram saw in his committee was a relatively low order of conflict such that interest groups with the most unified stand were more likely to carry the day.

Actually, legislators rarely have a clear and definitive assessment of public opinion regarding such a matter as brain death. Even public opinion polls and referenda questions, were they to be exercised here, would be heavily dependent for their results on the manner and technique of posing the question. Rather, legislative decision-making is generally more dependent on (and susceptible to) the lobbying efforts of well-organized interest groups, which are potent through the fruits of their organization: information, money, access to the public through media, and their resultant power to punish or reward legislators. In this respect, it is important to understand that the voting public in Massachusetts organizes to punish or reward legislators only every two years at the polls, while a well-organized interest group can bring what contingencies it owns to bear on even a daily basis. Therefore, the interest group possesses the capacity to impose a much richer schedule of punishment or reinforcement with some degree of specificity, while the general public's schedule is comparatively thin, and, as a rule, non-

---

LOUIS P. BERTONAZZI, M.A. is a Massachusetts State Senator. As a former member of the Massachusetts House of Representatives he served as the House Chairman of the Joint Committee on Health Care. As a member of the Massachusetts Senate, he now serves as the Senate Vice Chairman of the Committee on Health Care. Senator Bertonazzi holds an appointment as adjunct Assistant Professor in the Medical School of Boston University.

---

Address before the National Conference on Brain Death, Boston, MA., April 4, 1981.
EDITOR'S NOTE: Though reflecting the Massachusetts scene, the political principles can be applied to most state legislatures especially in the Northeast.

contingent on legislative behavior. Clearly, the interest group, organized, financed, and motivated around specific issues, is a more powerful vehicle for influence than an amorphous voting public.

Now I have been asked a question no doubt quite similar to that asked of Mr. Abram which is: Is there political liability regarding brain death legislation?

The answer to that question depends on what interest groups are concerned with brain death—or not concerned with brain death—or have entered the legislative field to pursue passage or defeat of a particular bill. At the present time House Bill 5520 is being held in the Joint Committee on the Judiciary. It calls for death to be defined in terms of "irreversible cessation of all functioning of the brain, including the brain stem," and that "determination of such death be in accordance with reasonable medical standards." Essentially this is the proposed Uniform Brain Death Act. At present the Committee members are being polled, having heard little testimony in opposition to the bill and only several statements in favor. None of the testimony emanated from what could be termed the "expected" interest groups, such as the Massachusetts Medical Society, the Massachusetts or Boston Bar Associations, or the Massachusetts Citizens for Life, Inc. An Auxiliary Bishop of the Archdiocese of Boston, whose official capacity relative to his testimony was unclear, spoke in opposition to the bill on "moral grounds."

Given such a lack of obvious interest group activity, especially from groups such as Massachusetts Citizens for Life, which has broad membership in legislators' constituencies, the conclusion is that there is at present little if any political liability attached to promoting a brain death act. However, given the typical inertia of the legislative process, the lack of interest group activity by the proponents might result in the legislation remaining in committee until it is reported out unfavorably by the automatic "Joint Rule 10" mechanism, thus defeating the proposal for this legislative session.

There is, however, in my opinion, the potential of this legislative proposal becoming a more controversial item as far as legislators are concerned. Such potential is related to the emotional aspects of the organ transplant and "life-support removal" connections with a brain death statute. Thus far, no interest group or individual has utilized a legislative forum to pursue these issues.

For example, a timely address concerning the removal of live-appearing individuals from life-support apparatus or suggesting that the only rationale for a brain death statute is to ease or speed organ transplant could well advance the controversy-potential into actuality. The mere presence of the Auxiliary Bishop at the hearing of the Judiciary Committee, according to a Committee staff member, has resulted in a fairly even split among members despite the fact that proponents outnumbered opponents. Injection of emotional appeals in opposition at this point could well result in an adverse Committee report.

Such emotional appeals, concurrent with adequate press coverage, could radically re-structure the contingencies under which legislative decision-making regarding brain death will be made. At the present time public opinion regarding the issue is undefined and unfocused. Emotional arguments around such points as organ transplant or removal of live-appearing persons from life support could easily change this by (1) generating broad concern, and (2) moving potential interest groups into active possession of the issue to capitalize on the public concern.

The point here is no real political liability accrues to supporters of a brain death statute as things stand today; but the potential exists for that liability if the obvious emotional potential were to be tapped.

This leads to the major question that this panel is supposed to address:

Is brain death a more accepted criterion now than it was 12 years ago?

The answer to this is clearly no, not as far as the general public is concerned. My assessment is that while professionals and philosophers may well find such a criterion acceptable, and while interest group situations often allow legislators to vote in favor, the general public may still be moved through emotional appeal into overt opposition. This emotional potential is, in my belief, evidence of the fact that the arguments in favor have not focused on the public at large and the selling-job there is yet to be accomplished.

# Current Medicolegal Issues

## THE CITATION

### Insurance Company Liable for Breach of Duty to Physician

An insurance company and an attorney breached a duty owed to a physician when they settled a malpractice suit against the physician without his consent, the New Jersey Supreme Court ruled.

The physician, a neurosurgeon, performed an arteriogram on a patient in the summer of 1968. In September 1970, the patient filed a malpractice suit against the neurosurgeon. He sought $3 million in damages, claiming that the arteriogram caused him to lose the use of his hands. The neurosurgeon's insurance company assigned an attorney to handle the defense, and the physician later signed a settlement consent form.

After signing the form, however, the physician learned from other physicians that the patient had been using his hands normally. Suspecting fraud by the patient, the physician then wrote to the attorney and stated that no settlement should be made. A $50,000 settlement was agreed upon despite the physician's attempt to revoke his prior consent. As a consequence, the physician's premiums were increased substantially.

In a suit against the insurance company and the attorney, the physician charged that the insurer breached its contract with him and that the attorney violated the attorney-client relationship. The New Jersey Supreme Court said that the physician's consent to settle the claim was revocable, since there was no contrary provision. The insurance company's settlement of the claim despite the revocation constituted a breach of the consent provision.

The attorney ignored the wishes of his client, the physician, and followed the wishes of his client, the insurance company. He violated his duty to the physician by not informing him of the conflict of interest between his two clients. The attorney's failure to withdraw from the case completely or terminate his representation of either the insurance company or the physician constituted actionable professional malpractice, the court said.

The neurosurgeon was entitled to a retrial and an opportunity to prove his damages, the court said.—*Lieberman v. Employers Insurance of Wausau,* 419 A. 2d 417 (N.J. Sup. Ct., Sept. 15, 1980)

### Patient Who Received Workmen's Compensation May Sue MD for Alleged Acupuncture Negligence

A patient may pursue a malpractice claim against a physician for alleged injuries from allegedly negligent acupuncture treatment even though he already had recovered workmen's compensation, a federal appellate court for the District of Columbia ruled.

The patient fell from a sawhorse on August 30, 1972, while working as a carpenter and injured his neck and back. He was awarded temporary total disability based on the injuries. Seventeen months later, he underwent acupuncture treatment by a physician. On March 30, 1974, during a treatment, an acupuncture needle broke off, leaving the tip lodged in his neck. The patient then experienced increased neck pain radiating into his right arm.

After another physician diagnosed a spinal defect, a physician performed a cervical laminectomy to remove a ruptured disc and the needle tip. The neck pain and discomfort persisted and, in August 1974, he filed a supplementary claim with the state Workmen's Compensation Commission. The claim was denied, but the patient appealed. The parties reached a settlement under which the patient received $20,000.

Then, in early 1977, the patient filed a malpractice suit against the physician who performed the acupuncture. A federal trial court granted summary judgment for the physician. The court said that the patient had consistently contended that the fall from the sawhorse was the only cause of his neck, arm and back pains and, therefore, he was estopped from now claiming that his injuries were caused by the acupuncture treatment.

Reversing the decision, the federal appellate court said that the patient was not barred by his prior settlement. The settlement was not a judicially endorsed agreement, and the estoppel doctrine did not apply, the court said. The patient was not precluded from suing the physician for essentially the same damages, since the actual cause of the injury was subject to reasonable disagreement among physicians. The patient could also contend that his previous position was due to a mistake rather than part of a scheme to mislead the

---

*THE CITATION* is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.

court, the appellate court stated.—*Konstantinidis v. Chen,* 626 F. 2d 933 (C.A., D.C., Feb. 21, 1980)

---

## Patient Sues for Alleged Negligence in Esophagoscopy

A malpractice action against a hospital and three physicians should be remanded to a trial court for further proceedings, the Pennsylvania Supreme Court ruled.

In August 1965, a patient with a piece of roast beef stuck in his esophagus went to a hospital, where a physician recommended surgery. The patient initially refused surgery, but when the physician told him that the procedure typically involved only an overnight hospital stay, he agreed to the operation.

The next day the physician performed an esophagoscopy to relieve the blockage. He removed several small portions of meat, eventually reducing the size of the portion to allow its passage into his stomach. During the procedure, however, a screw on the forward grasping forceps broke while inside his esophagus. As a result, the forceps opened suddenly and its narrow, pointed ends touched the walls of the esophagus. The physician found no evidence of perforation of the esophageal wall.

Shortly after the patient awoke from the anesthesia, he suffered abdominal cramps and his temperature increased to 100.4 degrees. The operating physician asked an associate surgeon to examine the patient. He reviewed X-rays, concluded that they did not clearly indicate a perforated esophagus, and ordered hospital employees to monitor his vital signs. The next morning, he was transferred to the intensive care ward.

When the associate surgeon returned to the hospital, the patient's rate of respiration and pulse had increased along with his temperature. No hospital employee had noticed the change in the patient's condition. The physician diagnosed a perforated esophagus and ordered antibiotics. The first dose was administered more than four hours later. As a result of the infection, the patient suffered a meningeal stroke, was forced to undergo several additional surgical procedures, and lost the full use of his right arm and left leg.

In a malpractice action against the hospital and two physicians, the patient claimed that the hospital failed to provide adequate care and one physician was negligent in puncturing his esophagus and the other was negligent in failing to administer antibiotics earlier. A trial court granted nonsuits against the hospital and one physician, and a jury ruled in favor of the second physician.

On appeal, the Supreme Court ruled that the patient had presented competent testimony that the physicians had failed to administer antibiotics at the earliest opportunity. The court also said that expert testimony was not necessary to establish negligence on the part of hospital staff in failing to notify the attending physician of the patient's deteriorating condition. The physician left explicit orders that the patient be moved to ICU and that his vital signs be monitored. He was not moved until five hours after the physician's order and no staff member monitored him during the night and notified the physician, the court noted.

The case was remanded to the trial court for further proceedings.—*Brannan v. Lankenau Hospital,* 417 A. 2d 196 (Pa. Sup. Ct., July 3, 1980; reargument denied, Aug. 15, 1980)

---

## Husband Can Recover for Emotional Distress After Incorrect Diagnosis of Syphilis in Wife

A husband had a cause of action against a physician for loss of consortium and emotional distress for negligence in erroneously diagnosing his wife as having syphilis, the California Supreme Court ruled.

The wife went to a hospital for a routine multiphasic physical examination. The physician who examined her advised her that she had a infectious type of syphilis. The diagnosis was erroneous, however, and she did not have the disease. Nevertheless, she was required to undergo treatment for the disease, including administration of massive and unnecessary doses of penicillin. She was instructed to advise her husband of the diagnosis, and he had to undergo blood tests. The tests revealed that he did not have syphilis.

As a result of the erroneous diagnosis, the wife became upset and suspicious that her husband had engaged in extramarital sexual activities. Hostility arose between them and divorce proceedings were initiated. The husband filed suit, claiming that he suffered extreme emotional distress and incurred medical expenses for counseling in an effort to save the marriage. A trial court dismissed the suit, and the husband appealed.

Reversing the decision, the California Supreme Court said that the husband had a cause of action for the negligent infliction of serious emotional distress. The negligent conduct of the physician was directed at the husband as well as the wife, the court noted. The hospital and physician owed the husband a duty to exercise due care in diagnosing his wife's physical condition, the court said. The complaint also stated a cause of action for loss of consortium from the physician's negligence.—*Molien v. Kaiser Foundation Hospitals,* 167 Cal. Rptr. 831, 616 P. 2d 813 (Cal. Sup. Ct., Aug. 25, 1980)

*—THE CITATION, Vol. 42, No.7/January 15, 1981*

# Use of Phrase "Usual, Customary and Reasonable" by Health Insurance Carriers

AMA COUNCIL ON MEDICAL SERVICE

At the 1980 Annual Meeting, the House adopted Substitute Resolution 6, which asks the AMA "to aggressively pursue with the insurance industry the improvement of terminology in third party communications so that the term 'reasonable charge' will not be misleading to the public and report its progress in this area at the 1980 Interim Meeting."

There has been growing concern with situations in which a third party payor notifies a beneficiary that the amount payable for a specific claim is less than the fee charged by the physician, and in which the language used in such notification could be misinterpreted as implying that the amount charged by the physician was inappropriate or unjustified. The need for careful use of terminology appears particularly acute in those programs where the amount of third party payment is derived from the prevailing range of actual charges made by other physicians for the service; i.e., is based on the "usual and customary or reasonable" concept. Careless use of language in such instances can convey the implication that any fee greater than the amount paid by the insuror is, ipso facto, "unreasonable."

The Council on Medical Service has met with representatives of the Blue Cross and Blue Shield Associations and the Health Insurance Association of America—as well as with HCFA officials—for further discussions of this problem. As the House is aware, the term "reasonable charge" has a specialized and precise meaning both in the Medicare program and in many private health insurance contracts, where it usually denotes the *lowest* of: (a) the actual charge made by the physician rendering the service; (b) the individual physician's median or "customary charge" for that service, or (c) the "prevailing charge," i.e., an amount which would cover the customary charge for the service in that locality a certain per cent (75%, 80%, etc.) of the times it is performed. (The application of this concept in the Medicare program was described in detail most recently in the Council's Report F at the 1980 Annual Meeting. The Council's attempts to eliminate misleading use of "reasonable charge" in the Medicare program and publications was described in its Report K at that same meeting.)

In both the Medicare program and UCR-based private insurance, because the "prevailing charge" for a service never includes the complete range of fees charged for that service, and because it is computed from past charge data, the amount of third party payment may in many instances be less than the physician's actual charge. The difficulty, according to insurance industry representatives, is in explaining this legitimate excess of the actual charge over the third party payment in a concise yet sufficiently detailed way in their communications to policy-holders. The difficulty is compounded, according to these representatives, by federal disclosure regulations which require carriers to explain to policy-holders the specific reasons and policy provisions on which partial denial of benefits may be based in a given claim. Such regulations, according to insurance representatives, do not allow the use of such general terms as "maximum benefit provided under contract" or "maximum allowable payment under policy."

Both the Blue Cross/Blue Shield and HIAA representatives indicated ongoing attempts nationally and by member plans and companies to improve benefit communications, and noted that many such member activities were undertaken cooperatively with local medical societies. They also suggested the use of more patient education materials in physicians' offices, and improved language in the insurance contract itself as additional approaches to this problem. The Council concurs with the need for such additional steps—and has in fact encouraged the inclusion of fee information in patient information booklets and greater clarity of insurance contract language in previous reports to this House. However, the Council believes that most patients become aware of the difference between the insurance benefit and the physician's actual charge only when filing a claim—underscoring the importance of a clear and non-inflammatory explanation of this difference in third party communications to patients. Accordingly, the Council will pursue the improvement of terminology in such communications, and will attempt to determine whether standardized or model language can be developed of a sufficient level of specificity to satisfy federal and state disclosure requirements while accommodating the variety of third party reimbursement methods now in existence.

A further report on this subject will be submitted at a future meeting.

---

*EDITOR'S NOTE: This is a report of the AMA Council on Medical Service to the House of Delegates at its Interim Meeting in December, 1980.*

For the pain of osteoarthritis the proven power of

**Motrin®**

ibuprofen, Upjohn

**600 mg Tablets**

One tablet t.i.d.

Please see the following page for a brief summary of prescribing information.

**Upjohn**

The Upjohn Company

The Upjohn Company • Kalamazoo, Michigan 49001 USA

**Motrin® Tablets (ibuprofen, Upjohn)**

**Contraindications:** Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema, and bronchospastic reactivity to aspirin, iodides, or other nonsteroidal anti-inflammatory agents. Anaphylactoid reactions have occurred in such patients.

**Warnings:** Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. *Motrin* should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If *Motrin* must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity characterized by papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with *Motrin*.

**Precautions: Blurred and/or diminished vision,** scotomata, and/or changes in color vision have been reported. If these develop, discontinue *Motrin* and the patient should have an ophthalmologic examination, including central visual fields and color vision testing. **Fluid retention and edema** have been associated with *Motrin;* use with caution in patients with a history of cardiac decompensation or hypertension. *Motrin* is excreted mainly by the kidneys. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of *Motrin* safety in patients with chronic renal failure have not been done. *Motrin* can inhibit **platelet aggregation** and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy. Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema. To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged **corticosteroid therapy** should have therapy tapered slowly when *Motrin* is added. The antipyretic, anti-inflammatory activity of *Motrin* may mask inflammation and fever.

**Drug interactions.** *Aspirin:* used concomitantly may decrease *Motrin* blood levels. *Coumarin:* bleeding has been reported in patients taking *Motrin* and coumarin.

**Pregnancy and nursing mothers:** *Motrin* should not be taken during pregnancy nor by nursing mothers.

**Adverse Reactions**

The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal, of which one or more occurred in 4% to 16% of the patients.

***Incidence Greater Than 1% (but less than 3%) – Probable Causal Relationship***

**Gastrointestinal:** Nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,* headache, nervousness; **Dermatologic:** Rash* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

***Incidence Less Than 1% – Probable Causal Relationship*****

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma; **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia; **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit, **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasm (see CONTRAINDICATIONS), **Renal:** Acute renal failure in patients with preexisting, significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria; **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

***Incidence Less Than 1% – Causal Relationship Unknown*****

**Gastrointestinal:** Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmia (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis; **Renal:** Renal papillary necrosis.

*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

**Reactions are classified under *"Probable Causal Relationship" (PCR)* if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under *"Causal Relationship Unknown"* if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

**Dosage and Administration:** Do not exceed 2400 mg per day. If gastrointestinal complaints occur, administer with meals or milk.

Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

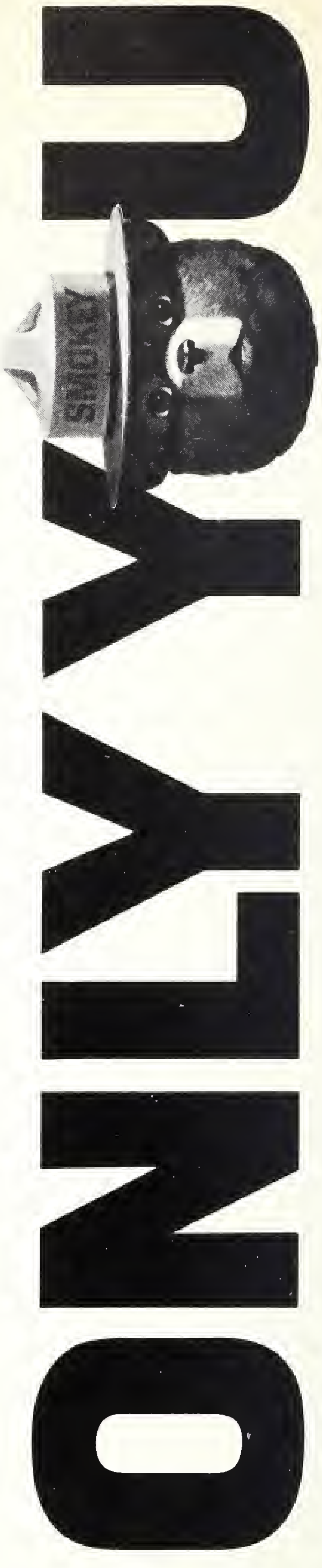
**Caution:** Federal law prohibits dispensing without prescription.

MED B-5-S

**Upjohn** THE UPJOHN COMPANY
Kalamazoo, Michigan 49001 USA

J-9042-4

July 1981



Ad Council A Public Service of This Magazine
& The Advertising Council

FOREST FIRE PREVENTION CAMPAIGN
MAGAZINE AD NO. FFP-1197-81
2¼" x 10" [110 Screen] CP-2-81/CM-3-81

# Confidentiality of Occupational Medical Records

AMA BOARD OF TRUSTEES

At the 1980 Annual Meeting, the House of Delegates adopted Resolution 95 and referred it to the Board of Trustees. Resolution 95 asked the American Medical Association to communicate its objections to the Department of Labor concerning the Access to Employee Exposure and Medical Records standard and agency procedures of the Occupational Safety and Health Administration (OSHA), to investigate whether OSHA may have exceeded its statutory authority in promulgating the rule, and to report its findings to the House of Delegates.

The OSHA standard and rule provide direct access by employees and their designated representatives to medical and exposure records and analyses maintained by employers or for which employers contract on a retainer or fee-for-service basis. The agency procedures also provide access by OSHA to the same records under stringent safeguards. The purpose of the standard and the rule is to enable workers to play a role in the direction and solution of their own health problems and enable the agency to carry out its regulatory authority "to assure so far as possible every working man and woman in the nation safe and healthful working conditions."

The medical record access standard was first proposed by OSHA in the July 21, 1978, *Federal Register.* The AMA submitted written comments on September 22, 1978, expressing concern that the standard would jeopardize the confidential relationship between physician and patient by permitting OSHA and other third parties to examine employee medical records. OSHA held public hearings on the proposal in December 1978 and January 1979 in Washington, D.C., Chicago, Illinois, and San Francisco, California. The AMA testified on January 9, 1979, in Chicago and submitted written comments on February 23, 1979. The final rule was published in the May 23, 1980, *Federal Register* and became effective August 21, 1980. A number of the concerns expressed by the AMA and others were addressed by OSHA and the final rule has balanced the need for the information in employer-maintained medical and exposure records with the individual employee's rights to privacy and protection of the confidentiality of medical record information of a sensitive nature.

Resolution 95 (A-80) also asked the AMA to investigate the statutory authority of OSHA to promulgate the medical record access standard and rule and report to the House of Delegates on the investigation. In the preamble to the rule, OSHA discusses in some detail the legal authority under which the rule was promulgated. Decisions of the U.S. Supreme Court and lower federal courts were also discussed to buttress the view that the Occupational Safety and Health Act is remedial legislation that is to be interpreted liberally to effectuate the congressional purpose. The decisions appear to support a grant of rulemaking authority to OSHA that is as broad as the general purposes of the Act. In the absence of an express statutory prohibition against granting access to employer-maintained or contracted employee medical and exposure records, there is no precedent for a successful court challenge to the medical record access standard and the agency procedures for OSHA access without employee consent.

In addition, section 657 (c) (1) of the Occupational Safety and Health Act provides that:

> "Each employer shall make, keep and preserve, and make available to the Secretary . . . such records regarding his activities relating to this Act as the Secretary, in cooperation with the Secretary of Health, Education and Welfare, may prescribe by regulation as necessary or appropriate for the enforcement of this Act or for developing information regarding the causes and prevention of occupational accidents and illnesses."

The authority in this section is broad enough to include employee medical and exposure records and provide access by OSHA to such records.

---

*EDITOR'S NOTE: This is a report of the AMA Board of Trustees to the House of Delegates at its Interim Meeting in December, 1980.*

AFL-CIO filed suit in the U.S. Court of Appeals for the District of Columbia shortly after the OSHA standard was published seeking judicial review of the standard. AFL-CIO alleges that OSHA failed to include two provisions sought by the union: the authority for a union physician or epidemiologist investigating a plant to obtain employee medical records without the required written consent of the employee and the authority of a union with a legitimate interest in plant safety to obtain employee medical records from the employer with the personal identifiers removed. The United States Chamber of Commerce has been granted permission to intervene as a plaintiff in this case to raise confidentiality and privacy issues. The Chemical Manufacturers Association is seeking judicial review in the Fifth Circuit.

The AMA is monitoring the litigation filed in the District of Columbia and in the Fifth Circuit closely. In addition, the Board of Trustees has approved an amendment to the Occupational Safety and Health Act to limit access to records required, rather than relating to, the OSH Act and to limit the representative an employee may designate to licensed physicians only for purposes of access. OSHA access to employee medical records maintained by a physician would be limited to only that information relating to exposure to potentially toxic materials and harmful physical agents that are required to be monitored or measured under the Act.

The Board of Trustees will continue to monitor the developments in the judicial and legislative arenas relating to the OSHA medical record access standard rule, and to report as appropriate to the House of Delegates.

---

# Fatal Measles in an Adult — California

On July 4, 1980, a 33-year-old woman from Santa Ana died because of apparent viral encephalitis. A subsequent review of her case indicated that the cause of death was almost certainly measles encephalitis.

According to her private physician, the woman had onset of fever, coryza, and malaise on May 28. On June 2, she had onset of a facial rash, which then became generalized. On June 4, her physician noted a bright morbilliform rash typical of measles.

The next day, she called to complain of numbness and pain in her lower extremities. Her physician advised immediate hospital admission. By the time the ambulance arrived, the patient could no longer walk; by the time of arrival at the hospital, she was unconscious, and shortly thereafter she suffered a cardiorespiratory arrest. She was resuscitated but never regained consciousness and died 1 month later. Her rash lasted a total of 8 days. Neurologic examination at admission revealed coma with no localized findings. Viral and bacterial cultures of cerebrospinal fluid were negative. An electroencephalogram showed diminished activity, and computerized tomography scan suggested generalized swelling of the brain.

A serum specimen taken on June 6, 9 days after onset of illness, showed a complement-fixation (CF) titer to measles of 8, a hemagglutination-inhibition titer to rubella of 64, and CF titers $<8$ for herpes simplex, varicella zoster, and cytomegalovirus. After the patient's death, a portion of the June 6 serum specimen (the only serum available) was referred for measles IgM antibody testing by the indirect-immunofluorescence technique at the state's Viral and Rickettsial Disease Laboratory. Her IgM titer was $\geqslant 512$, indicating recent measles infection. (Measles IgM antibody generally rises before CF.)

The patient had a negative history for prior measles disease or immunization. None of her household contacts had had recent measles-like illness, but she worked as a retail clerk in a store when measles was present in Orange County.

*Reported by R. Morton, M.D., Santa Ana, T. Prendergast, M.D., B. Peck, P.H.N., R. Greenwood Ph.D, Orange County Health Dept., L.G. Dales, M.D., J. Chin, M.D., State Epidemiologist, California Dept. of Health Services, in the California Morbidity Weekly Report, November 7, 1980; Surveillance and Assessement Br. Immunization Div. Bur. of State Services, C.D.C.*

**Editorial Note:** This case illustrates an unusual but severe complication of measles. Although the overall ratio of measles encephalitis to measles cases is approximately 1 per 1,000 reported cases, the risk of encephalitis increases in adolescents and adults (*1*). The death-to-case ratio for measles encephalitis is substantial: between 1963 and 1977, 13.9% of all persons reported with measles encephalitis died (*2*). Most cases occur between 4 and 7 days following the onset of rash, with a range of 1 to 15 days (*3,4*). The most frequently reported signs and symptoms are fever, convulsions, lethargy, irritability, and coma. Other manifestations include headache, disorientation, tremors, nystagmus, and nuccal rigidity. The cerebrospinal fluid is usually abnormal. Lymphocytic pleocytosis occurs in 75%-85% of cases, and protein elevations in 50%-100% of patients. The glucose level is usually normal.

Measles should be considered in the differential diagnosis of any suspected viral encephalitis with rash.

*—Morbidity and Mortality Weekly Report, Nov. 28, 1980, Vol. 29, No. 47, Center for Disease Control, Atlanta, Ga.*

# Month in Washington

Within a span of seven days in May the Administration achieved an historic triumph in Congress, with the House and then the Senate approving budget resolutions to cut federal spending by more than $40 billion.

The serious opposition to the economy drive came in the House where the Democratic leadership made a party issue of a substitute budget plan that would not have cut so deeply. More than $2 billion of health program reductions would have been restored under the Democratic budget, but the Republican plan hewing to the Administration's lower levels easily prevailed, 253 to 176.

The Senate followed suit the following week with a budget resolution tailored to the Administration's specifications. A conference committee has ironed out the relatively minor differences between the two measures.

Only eighteen Democrats and two Republicans resisted the economy wave in the Senate as the Administration plan sailed through 78 - 20. Among those voting for the measure was Senate Democratic leader Robert Byrd (D-W.Va.) Senate Budget Committee Chairman Pete Domenici (R-N.M.) said the vote "clearly indicates the Senate is prepared to change its spending habits . . . Over the long run we have started a trend toward fiscal sanity."

Before the final vote, the Senate buried, 81 to 17, a proposal by Sen. Donald Reigle (D-Mich.) to pare defense spending by $2 billion and increase social program spending the like amount.

As a result of the actions, the committees of Congress are now forced to review their legislative agendas to decide where programs must be cut in order to conform to the spending ceilings imposed by the resolution.

The Democratic budget plan that foundered in the House would have forestalled the two major reductions in health sought by the Administration—the five percent "cap" on federal Medicaid contributions next fiscal year and the block grant, 25 percent funding cut plan for Public Health Service categorical grant programs. The alternate budget also proposed continuation of two health programs marked by the Administration for phasing out—Health Planning and Professional Standards Review Organization (PSRO).

The Senate Finance Committee moving to cut programs within its jurisdiction, approved major changes in health programs. The committee voted to cut Medicaid spending next fiscal year by $800 million by reducing the federal minimum contribution to the states to 40 percent from the present 50 percent. At the same time, the "cap" on increased federal outlays for the program was lifted to nine percent.

The committee also raised the Medicare Part B deductibles and premiums, reduced the Medicare nursing differential from the present 8.5 percent to 4.5 percent, and made retired federal employes' private health insurance pick up the tab first before Medicare kicked in. Some $1.2 billion of Medicare spending would be saved.

The House Ways and Means Health Subcommittee is considering similar legislation.

The House budget vote was preceded by intense lobbying by both sides. Democratic committee chairmen warned in House speeches that the House's hands would be tied to the Reagan economies for the rest of the year, if the President's plan were approved.

Reagan met personally with most of the Democrats who finally voted his way. The 63 bolting Democrats provided an easy win for the Administration as they joined all Republican members of the House.

****

The Administration has sent Congress its formal recommendations for changes in Medicaid and Medicare, including the "cap" of five percent on federal Medicaid outlays aimed at saving $1 billion next fiscal year.

The federal ceiling would be about $17 billion next fiscal year. In the future the limit would be allowed to rise with the rate of inflation. The cap is necessary to control Medicaid costs, the Administration said.

"With the flexibility available through the Administration's proposed revisions in program requirements, cost restraint can be achieved by the states without reducing necessary services for the needy. The states

---

*Prepared by the Washington D.C.*
*Office of the American Medical Association*

would be able to design programs which will provide for health care delivery in much more economical and efficient ways," said the Health and Human Services (HHS) Department in a statement.

The most controversial of the recommendations would repeal the freedom of choice requirement in present law which gives Medicaid beneficiaries the right to choose their facility or physician. This would be replaced by a requirement "to provide standards that afford medical care of adequate quality." HHS said this change would allow states "to effect significant cost savings while maintaining quality care, for example, by soliciting competitive bids for provision of covered services."

In addition, all federal requirements on the amount and method of reimbursement of providers would be eliminated. This includes the present requirements for reimbursement of inpatient hospital services as well as "barriers in the law to reimbursement based on fee schedules." Provisions which "have restricted the use of health maintenance organizations" in providing Medicaid care were lifted.

The legislation calls for a phase-out of the "costly and burdensome" Professional Standards Review Organization (PSRO) activities for both Medicaid and Medicare. "Effective PSROs would be supported until 1983. States would have discretion to determine the most appropriate form of review and to set up state utilization review requirements. Effective PSROs would be able to compete for state or private contracts within the health care system."

Eliminated would be federal requirements for hospital and nursing home utilization review plans and committees. PSRO agreements could be terminated on 90 days notice without formal hearing or judicial review. State PSRO coordinating councils would be ended.

The legislative changes in Medicare were less controversial but were intended to save about the same amount of money—$1 billion. Private health insurance companies, including Blue Cross-Blue Shield, would be affected by a proposal to phase-in over a five-year period competitive bidding for award of contracts for claims processing. Medicare would be allowed to contract with any public or private organization for claims processing. HHS contended incentives for efficiency and economy don't exist under the present non-competitive bidding structure and anticipated savings of some $120 million a year by 1985.

Other proposed Medicare changes:

* new civil financial penalties for provider fraud and abuse and ability to bar offenders from participating in the program.

* elimination of the higher rate of reimbursement for routine nursing care for Medicare patients.

* reducing or eliminating relatively minor benefit expansions adopted by Congress last year, including outpatient alcohol detoxification and outpatient rehabilitation facilities and unlimited home health service visits.

* elimination of federal end stage renal disease networks.

****

The Health Planning Act "is ill conceived, beyond salvage and must be repealed," the American Medical Association has told the National Council on Health Planning and Resources Development.

Since its inception, the planning program has not been responsive to local needs and circumstances, the Council was told by Lonnie Bristow, M.D., a member of the AMA Council on Medical Service. Planning has developed into a "bureaucratic maze of plans, applications and red tape that unduly delayed the development of needed projects and substantially increased individual project costs," Dr. Bristow told the meeting, conducted by HHS.

Urging repeal of the program, which the Reagan Administration has proposed phasing out, Dr. Bristow said planning has inhibited market forces needed to strengthen competition in the health care marketplace and "represents the antithesis of a free market system by establishing barriers to free entry by qualified providers in the marketplace."

The AMA official said the Association is committed to seek improvements in the health care delivery system through a voluntary system that will reduce or eliminate barriers to the provision of high quality medical and health services. Dr. Bristow called for a collaborative effort at the community level.

Legislation to repeal the Health Planning Law has been introduced in Congress by Reps. Richard Shelby (D-Ala.) and Phil Gramm (D-Texas).

The repeal legislation was strongly supported by the AMA which said repeal "is absolutely necessary to end federal interference in local planning decisions."

Noting that an end to funding, as the Administration recommends, does not end the federal requirement that states enact conforming certificate-of-need laws, the AMA said flat repeal won't be an easy task.

Listing its objections to the program in a "legislative alert" statement, the AMA said planning imposes federal regulations upon what should be primarily locally-directed health planning. The program is not cost-effective and is anti-competitive, "creating barriers to market entry through burdensome certificate-of-need and other approval requirements," the AMA said.

The highly-complex law and regulations cause "excessive" time and resources devoted to red tape instead of delivery of care, the AMA said.

# The President's Page

## Can We Play the Role?

As physicians we hold an interesting position in current society. We are applauded for our increasing technical and scientific skills, but condemned for our growing distance from the patient. Gone, it seems, are the old, friendly, family Doc's who had coffee at the kitchen table after a leisurely house call. Too many of us have become acquaintances rather than friends of even our oldest patients. Our demeanor has increasingly seemed to promise more than we have been able to deliver, and in the confusion over this role change, the heightened expectations of our patients has resulted in the large number of malpractice suits when results are less than "promised." It is easier to sue a stranger.

Despite the ever increasing pressures on our formerly almost absolute credibility, we physicians still enjoy a generally favorable attitude from the public. We are still trusted more than lawyers, politicians, labor leaders, dentists and teachers. This trust is not what it was years ago and seems to be waning. We can awaken it, revitalize its upward surge, only by putting back into the market place that which we seemed to have removed unwittingly over the years. I call this element "involvement" and its offspring, the appearance of "caring."

If we become involved in community efforts with our patients in doing the work that makes our society better than others—assuring quality education, seeing to the disadvantaged, assuring equality of opportunity regardless of race, color or creed, becoming integral parts of communal activities, we become visible, known and respected as men and women who practice medicine, not deification. The perception that we care enough to join them in the obligations of society will greatly enhance our image and our reception as healers—not as some demi-gods incapable of honest error. Our willingness to mingle, to communicate, to relate, will do more for the "malpractice debacle" than premium decreases and tort reform combined.

A combination of common sense medical practice, involvement, and an attitude of caring will go a long way toward helping us resolve our current liability problems.

Why don't we try it. It might be fun.

Andrew J. Canzonetti, M.D.
*President*

# "Your suit is ready, doctor," said the tailor.

---

Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs,* 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.

Ætna
LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company

# Reflections from the Dean's Office

## The New Economics and the Future

ROBERT U. MASSEY, M.D.

Medical schools, like hospitals, hardware stores, and Health Systems Agencies, are anxious about how the new economics will affect them; though they may be uncertain about words like *competition* and *supply side,* they are certain that there will be change. "An old man, my lord, never likes changes," said the dean in Anthony Trollope's *Barchester Towers,* and twentieth century medical school deans would almost involuntarily add their quiet amen.

Yet there is an air of adventure rather than a sense of dread; there is talk of opportunities "to do things we wouldn't otherwise do," and an admission that "we couldn't expect things to go on the way they were."

Physicians and scientists would like to believe that through all of this changing political and social weather, science will steer a steady course, steadier than the other disciplines because of the self-correcting nature of the scientific method. Hypotheses are tested and retained or discarded almost without sentiment, and the great journey of scientific discovery goes on until all of nature that is knowable is known. Of course, not everyone sees it that way; some social historians view what we should call scientific advancement as just another manifestation of the social condition, an artifact of institutional or political forces. Those are extreme views, but nevertheless it seems evident enough that politics and science move one another, but of the two, science has in the long run the greater momentum.

Other academic disciplines appear to be more susceptible to changing fashion. Philosophy has its schools, and history has its proponents of new directions and new analyses. Some anthropologists study bones and ancient artifacts; others worry about health care delivery, unable to make a convincing distinction between their discipline and that of sociologists or social historians.

There is an apparent relationship between political party, system of history, school of philosophy, and architectural style, not fixed, but generally predictable. A physicist may be Labor or Tory, Social Democrat or Christian Democrat, without much affecting his physics; an anthropologist cannot be a Republican without our guessing his style of anthropology.

There is a concern that the quality of medical care for the poor and elderly will decline under the new economics; there is also a concern that this will diminish the revenues of the medical schools and teaching hospitals. Both are causes for worry, but it seems unlikely that teaching hospitals will give up providing care because of changes in the way care is financed; the costs will be moved somewhere else, or perhaps the system will become more efficient; it might even provide better care for less cost because of more knowledge.

The effects of cutting back on scientific research and student support are another matter. Perhaps industry will carry more of the burden of basic research, and perhaps communities, societies, and individuals will increase their charitable giving for scholarship support and academic work, but it will not be enough. The costs of some aspects of the academic enterprise might undoubtedly be reduced without irreparable harm. In fact, though they would deny it, some deans have been heard to say privately that a little improvement could be effected with judicious pruning here and there.

Support for scholarly work in the arts and sciences cannot be reduced without risking grievous harm to some important part of the future of our civilization. Because of the unpredictable nature of the human intellectual activity, no one can point to exactly where that harm will fall or how long it will last. And just as the scientific and scholarly enterprise must be sustained, so must the young scientists and scholars who are to do the work which is as yet undefined and unassigned.

The distinctions between investments and present needs are not hard to make; whether a nation's economy is much affected by an economic theory currently in vogue may be difficult to demonstrate using the scientific method. There are good examples that suggest that the market place works to keep prices down, quality up, and distribution adequate; there is little to suggest that market forces alone will sustain the arts and sciences or provide for young students so that they may have their productively unproductive years. "Es bildet ein Talent sich in der Stille," said Goethe; having to worry about a burden of debt is no way to do it.

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

**NEW YORK UNIVERSITY**
**POST-GRADUATE MEDICAL SCHOOL**
*offers*

# MEET THE PROFESSORS

**Wednesdays, 4 to 7 p.m.**

**October 14 to December 23, 1981**
**(No Session November 25)**

**Course Directors:**
Saul J. Farber, M.D.,
*Frederick H. King Professor of Internal Medicine and Chairman*, Department of Medicine
Louis Shenkman, M.D. *Associate Professor of Medicine*

## COURSE DESCRIPTION

This new course, replacing Consultations in Internal Medicine, is designed to provide even greater interchange between NYU faculty from diverse specialty areas and physicians in internal medicine and family medicine. Each 3-hour session will consist of a distinct unit covering a variety of topics of current interest and controversy. Faculty have been specifically requested to describe "How I Do It," as well as recognizing differing viewpoints. The course experience will enhance the effectiveness of the day-to-day decision making required of practicing physicians.

Each session will begin with capsule presentations for which written handouts, case reviews or blackboard illustrations may be utilized followed by open discussion. To make the interchange more informal, registration will be strictly limited to 60 participants.

## TOPICS

Arthritis: Diagnosis and Treatment

Management of the Diabetic

New Diagnostic and Interventional Tools Available from the Radiologist

Coronary Artery Disease—1981

Antithrombotic Drugs: Specific Prophylactic Choices for Arterial and Venous Thromboemboli

Present Concepts and Therapy of Hepatitis and Peptic Ulcer Disease

Managing Clinical Problems in the Elderly

Breast and Melanoma Surgery: Options and Recommendations

Current Use of the Newer Antibiotics

Common Medical Emergencies—Practical Lessons from the Emergency Room

**FEE: $490** 30 Category I credit hours; 30 AAFP prescribed credit hours (pending).

**ALSO**

# CLINICAL TUTORIAL

### 152. Dermatology for the Practicing Physician

**Thursdays, 1:30 to 3:30 p.m.** **October 22 to November 19, 1981**

David L. Ramsay, M.D., *Associate Professor of Dermatology*

Specifically designed for non-dermatologic physicians, especially those involved in primary care practice. Major emphasis is on unraveling diagnostic possibilities in a presenting dermatological complaint and providing practical guidelines for relieving the patient's symptoms and promoting resolution while the evaluation is proceeding. Special attention is given to the most commonly encountered dermatological problems in general office practice. Teaching includes lectures, live case presentations, group discussions and a forum for presenting diagnostic and management problems from the registrant's practice.

**FEE: $180** 10 Category 1 credit hours; 10 AAFP prescribed credit hours (pending).

*Physicians may enroll in one or both of these post-graduate courses.*

**For further information, write or call:**
NYU Post-Graduate Medical School
550 First Avenue, New York, NY 10016
(212) 340-5295 (24-hour telephone service)

**CM 7/81**

# Abortion 1981: The Search for Perspective

JOSEPH M. HEALEY, J.D.

The most difficult task facing a Supreme Court observer, is to assess accurately the impact of a Supreme Court decision. This is a tricky matter because of the problem of distortion. It is possible to undervalue the significance of a case, to miss a major turning point which stands out clearly only in retrospect. It is equally possible to overvalue the significance of a case, to exaggerate the implications of a case whose influence is in fact very limited. This latter error can have serious consequences because the distortions involved may contribute to further, unnecessary polarization of competing parties. I believe this has been the case with the recent United States Supreme Court decision[1] dealing with parental notification of a minor's attempt to seek an abortion.

The Utah Abortion Statute required that a physician notify, if possible, the parents or guardian of the woman upon whom the abortion was to be performed if she were a minor, or the husband of the woman if she were married. An unmarried minor, living with and dependent upon her parents, became pregnant. A physician was unwilling to accede to her request that an abortion be performed without first notifying her parents. The minor filed suit alleging that the Utah Abortion Statute unconstitutionally violated her right of privacy and attempted to establish the right of all minor women to have access to abortion without notification of their parents. Neither the trial court nor the Utah Supreme Court granted the relief she sought. She appealed to the United States Supreme Court. In a 6-3 decision, the United States Supreme Court also refused to grant her the relief she sought. The Court used as its starting point the fact that the woman was an unemancipated minor, living with and dependent upon her parents and making no claim or showing as to her maturity. In this light, the Court concluded that she lacked legal standing to assert the claims of either mature minors or emancipated minors. As applied to a minor in her situation, the Utah Statute, the Court concluded, could serve to protect adolescents and to provide an opportunity for parents to supply important medical information to the physician. Therefore, on the facts of the case presented, the statute did not violate the constitutional rights of the minor or of all minors.

Many commentators have regarded this decision as representing another step in the retreat from the rights established for women in the previous abortion cases. They have considered the imposition of the notification requirement as the creation of another barrier to the exercise of important constitutional rights, not unlike the barriers which result from limited federal and state responsibility to provide financial support for abortions.[2] I would caution against exaggeration of the impact of the decision because of the tightly-drawn fact situation in this case and the Court's apparent unwillingness to extend its holding into previously protected areas, especially those involving mature or emancipated minors. The short discussion of a case like this in the media cannot adequately present a complex fact situation which has limited applicability. This is especially true when dealing with an emotion-laden issue like abortion. We must be careful not to misinterpret cases or read too much into them. There is a temptation to distort the true meaning of the Supreme Court decision either accidentally or for rhetorical purposes. But advocates and opponents of abortion alike must use as the context of the societal struggle over abortion, an honest and fair reading of the abortion cases. One must keep perspective, though the dramatic increase in the bitterness associated with the abortion debate makes the task very hard. The full measure of our civility is being tested on a daily basis in this regard. There is no sign of resolution in the forseeable future and it is incumbant upon us all to assure that this societal debate will remain within reasonable bounds.

## REFERENCES

1. *H.L. v. Matheson*, 49 LW 4255 (1981)
2. *Harris v. McRae*, 48 LW 4941 (1980)
   *William v. Zbaraz*, 48 LW 4957 (1980)

---

JOSEPH M. HEALEY, J.D., Assistant Professor of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, Ct.

**Have you considered participation?**

- The Century Contract Comprehensive Schedule of Services has been increased *three times* in 18 months.
- These increases, in the aggregate, have amounted to 51.6%.
- We will continue to update the Century Contract schedule annually.
- Participating Providers receive prompt payments directly from Blue Cross & Blue Shield.
- Your participation can reduce receivables and eliminate some billing steps.
- Over one million Connecticut residents are Century Contract members for whom claims totaling $82.5 million were paid in 1980.
- Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

**Blue Cross**
**Blue Shield**
of Connecticut

THE HEALTH CARING PEOPLE

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Provider, call our office or complete the form below and send it to:

Blue Cross & Blue Shield of Connecticut
Professional Relations Department
370 Bassett Road
North Haven, CT 06473

Telephone: 1-800-922-1742 or 265-8203

Name ______________________ Telephone ______________

Address ______________________________________

City ______________ State __________ Zip ____________

CM781

Connecticut Medicine
*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*
Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
James D. Kenney, *New Haven*
Ramon N. Kranwinkel, *Danbury*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Stewart J. Petrie, *Derby*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*

# EDITORIALS

## Research by Medical Students

It is self-evident that the practice of medicine requires a life-time commitment to learning and the capacity for the assimilation of new information. Advances in science and technology occur rapidly and relentlessly and, together with increasing awareness of the impact of science and technology on everyday life, raise expectations by the public that physicians not only understand the application of science and technology but also have the ability to evaluate recently acquired knowledge. Questions are raised with increasing frequency by all segments of society about the benefits and risks of new diagnostic and therapeutic procedures.

There is little or no reason to think that historical forces at work during this century to enhance biomedical sciences and establish the new biology have subsided. On the contrary, there is every reason to believe that the remarkable base of scientific knowledge will grow exponentially for the foreseeable future and that achievements in the physical sciences, molecular biology, *etc.*, will be expanded and exploited and that a better understanding of the prevention, diagnosis and management of disease will result.

If this is so, then an urgent and essential problem in medical education is to prepare physicians for the changes to come. The de-emphasis of a research experience for medical students is one of the interesting paradoxes in medical education. Little time is made available to students for a research experience and a requirement for research has all but vanished. Furthermore, the increasing emphasis on didatic educational methods at the expense of the independent study does not encourage the development of a mind-set prepared for change.

On the other hand, a good research experience during medical school provides some of the opportunity to prepare for a dynamic future. Students who spend a reasonable amount of time in research should have a better understanding of how to ask the appropiate questions, how to gather information with a bearing on the questions raised and how to evaluate, quantitatively and qualitatively, novel findings and concepts. A research experience should also provide instruction about the limits of experimental methodology and an appreciation for the integration of the new information with the established truth. Most importantly, it should also teach that the acquisition of knowledge is a self-correcting process involving re-examination of the facts in the framework of advancing technology and methodology. Finally, there is the generally useful sharpening of intellectual skills that results from the rigor characteristic of the scientific method.

There is some evidence that research by medical students has this effect. A medical student at the University of Connecticut, upon the completion of a research project, made two observations. First, that an enormous effort is required to support a simple statement in a textbook and, second, that the textbook might be wrong.

It should be clear that medical student research activities are intended primarily for those students who will devote their careers to the practice of medicine and not to attract more physicians to careers in academic medicine. The goal of medical student research in medical education should be to expose all medical students to the rewards of an inquiring mind.

The Sigma Xi Club of the University of Connecticut Health Center sponsored the first annual medical student research day on February 9, 1981. Twenty students participated by providing abstracts on their studies of a variety of biomedical and biobehavioral topics. Of these, six students were selected for oral presentations before the faculty and student body of their research findings. Abstracts of their presentations are published on pages 449 - 453 in this issue of *Connecticut Medicine.* The program concluded with a Sigma Xi Lecture by Dr. Seymour Reichlin, Professor of Medicine, Tufts University School of Medicine, entitled "Many Faces of Somatostatin."

Robert L. Volle, Ph.D.
*Associate Dean*
*Preclinical Education*
*President, Sigma Xi Club, University of Connecticut*
*Health Center, Farmington, CT 06032*

---

## The Effect of Tobacco Smoke on the Non-Smoker

The smoke-filled rooms of political lore are not mythologic. Twice as much smoke is released from cigarettes into the air where it is known as sidestream smoke (S.S.) as into the mouth, where it is known as mainstream smoke (M.S.). The S.S. is from the lighted end, the burning ash; the source, unfiltered by cigarette or respiratory system. It is unnecessary here to recount the hundreds of polycyclic hydrocarbons, polonium, carbon monoxide, and nicotine which are present in cigarette smoke. The hydrocarbons provide the taste, the nicotine the "fix," and the polonium and carbon monoxide go along for the ride. The non-smoker in the smoke-filled room is privileged to inhale them all, the equivalent of smoking 1 to 10 unfiltered cigarettes daily.

What are the effects on the recipient of all this public donation to the atmosphere in which he lives and breathes? The effects are both acute and chronic. The *acute* effects are largely due to sensitivity to various substances in the smoke, to nicotine, and to carbon monoxide. Stock[1] reports that at least 50% of non-smokers report definite ill effects from cigarette smoke. Conjunctivitis and respiratory distress are well-known. Less well-known are the effects of *nicotine* in the blood of the known smoker. Since nicotine causes decreased cutaneous blood flow, it is of interest that Raynaud's phenomenon has recently been reported in passive smokers by Bocanagra and Espinoza.[2] A man who smoked 4½ pkgs. of cigarettes daily and his non-smoking wife both had Raynaud's phenomenon. Five to six months following separation from her husband, the phenomenon disappeared and she has remained free of it. He married another woman and she too developed Raynaud's phenomenon. To medical advice to quit smoking, he indicated that he was too addicted, but he did cut down to 2 pkgs./day and smoked only in a separate room. Two weeks later her symptoms disappeared and his have persisted.

The effects of *carbon monoxide* (CO) are perhaps more subtle but real. Goldsmith and Landaw[3] state that CO occurs in a high concentration in cigarette smoke (more than 2%), and that in an urban population, cigarette smoking is probably the most important source, followed in importance by motor vehicle exhaust, occupational sources, and home heating and cooking devices. Grob[4] places the CO content of whole cigarette smoke at 3.2%. Since human hemoglobin (Hgb) has a much greater affinity (210x) for CO than for oxygen, demonstrably higher levels of COHgb should be present in smokers than in controls. Goldsmith[3] estimated the concentration of COHgb in a population of longshoremen, and found the median value for non-smokers to be 1.2%; and for heavy cigarette smokers (2 pkgs./day) who inhale, 6.8%. Astrup[5] has observed that 10% of all smokers have more than 10% COHgb levels, and that values up to 20% occur in heavy smokers. Thus smokers decrease the amount of oxygen available to the tissues.

The 1964 report of the Public Health Service[6] pointed out that cigarette smoking may set off myocardial oxygen deficits of a critical nature, first by increasing the myocardial demand for oxygen through norepinephrine release, and second, by decreasing the amount of oxygen available through impaired coronary blood flow, hypoxemia due to pulmonary disease, and impairment of oxygen dissociation from hemoglobin due to the formation of COHgb from CO.

The Public Health Service[7] concluded from a study of more than 1 million people that cigarette smoking can contribute to the development of cardiovascular disease and particularly to death from coronary heart disease. What then are the effects on the non-smoker of inhalation of cigarette smoke? Lindenberg et al[8] reported that they exposed 15 dogs to a CO concentration of 50 p.p.m. for 6 weeks; seven of the dogs were exposed for six hours daily five days/week, the others continuously. All showed E.C.G. changes and, at autopsy, scarring of myocardium in some cases. Astrup[5] fed 24 rabbits for eight weeks on a cholesterol-containing diet. Of these, 12 were kept for six weeks in atmospheric air containing 0.017% CO leading to about 15% COHgb in the blood; and for another two weeks they were kept in about 0.035% CO, leading to about 30% COHgb in the blood. In the experimental group, atheromatosis was far more developed than in the control group, eight animals had myocardial necrosis and seven had multiple small subendocardial hemorrhages. In the cholesterol-fed control group, not exposed to CO, one animal had necrosis and no hemorrhages appeared. Since the human brain is acutely sensitive to oxygen deprivation, such levels of CO in the blood of non-smoking doctors in smoke-filled committee rooms would certainly affect their judgment, and on a sustained basis, their cardio-vascular systems.

It has long been suspected that passive smoke is harmful to the lungs, but this has not been documented until recent years. In 1974, Harlap and Davies,[9] in a study involving thousands of babies in their first year of life, showed that passive smoke increased the risk of development of respiratory illness, both bronchitis and pneumonia, in such children. Five years later, Tager et al[10] studied the pulmonary functions of children aged five to nine from hundreds of Boston families who had smoking parents, compared with those whose parents were non-smokers. They found a reduction in small airways function in the lungs of the children who had smoking parents.

In 1980, White and Froeb[11] reported on a study of 2150 middle-aged men and women non-smokers exposed to tobacco smoke at work. Candidates with health, environmental, or occupational considerations that could influence pulmonary function adversely were disqualified. Small airways testing showed normal function in those not exposed to smoke at home or at work. In those who came from non-smoking homes, but had worked at jobs for more than 20 years where they were exposed to tobacco smoke, a significant reduction in the function of small airways occurred, equivalent to those who inhaled between 1 and 10 cigarettes daily. It was postulated that since, in young smokers who develop dysfunction of the small airways, continued smoking leads to extensive lung disease; long-term damage may very well occur in passive smokers.

Confirmation of lung damage in the passive smoker has now been published by Hirayama,[12] an epidemiologist at the National Cancer Centre Research Institute in Tokyo. The study was conducted from 1965 to 1979 and involved 91,540 non-smoking wives aged 40 and above. The standardized mortality rates for lung cancer were assessed according to the smoking habits of their husbands. A dose-response relation was observed. Women whose husbands smoked more than 20 cigarettes a day were found to have a risk of lung cancer 2.08 times higher than women whose husbands did not smoke. The effect was particularly striking in agricultural areas, uncomplicated by urban air conditions, when the husbands were aged 40-59 at enrollment. Then the non-smoking wives of husbands who smoked two or more pkgs. daily developed lung cancer 4.6 times as often as the wives of non-smoking husbands.

It is concluded that the effects of tobacco smoke on the non-smoker may be acute, consisting of such things as cough, red eyes, asthmatic attacks, even Raynaud's phenomenon, and lowered cerebral function. The chronic effects may be cardiovascular disease, reduction of function of small airways and increased chance of lung cancer.

Raymond Yesner, M.D.
*Director of Pathologic Anatomy*
*Laboratory Service*
*Veterans Administration Medical Center, West Haven, CT*

## REFERENCES

1. Stock S: The perils of second-hand smoking. New Sci, 88: (1221) 10-13, 1980
2. Bocanagra TS, Espinoza LR: Raynaud's phenomenon in passive smokers. New Engl J Med, 303: 24, Dec. 11, 1980
3. Goldsmith JR, Landaw SA: Carbon monoxide and human health. Science, 162, 3860:1352-59, 1968
4. Grob K: Gaseous components of tobacco smoke. Toward a less harmful cigarette. N.C.I. Monograph 28, Wynder, E.L. and Hoffman, D. (Eds): pp. 215-220, U.S. Gov't Printing Office, Wash. D.C., 1968
5. Astrup P: Carbon monoxide and peripheral arterial disease. Scand J Clin Lab Invest 19 (Suppl. 93):193-197, 1967
6. Smoking and Health. Report of the advisory committee to the surgeon general of the Public Health Service, p. 30, 1964
7. The Health Consequences of Smoking: A Public Health Service Review. U.S. P.H.S. Pub. No. 1696 (1968)
8. Lindenberg R, Levy D, Preziosi T and Christensen M: Amer Indust Hygiene Assn., Wash. D.C., 1962
9. Harlap S, Davies M: Infant admissions to hospital and maternal smoking. Lancet 1:529-532, 1974
10. Tager TB, Weiss ST, Speizer FE: Effect of parental cigarette smoking on the pulmonary function of children. Am J Epidemiol, 110:15-26, 1979
11. White JR, Froeb HF: Small-airways dysfunctoin in nonsmokers chronically exposed to tobacco smoke. New Engl J Med, 302(13): 720-23, March 27, 1980
12. Hirayama T: Non-smoking wives of heavy smokers have a higher risk of lung cancer: a study from Japan. Brit Med J. 282:183-185, Jan. 17, 1981

---

# Aging—Pilot Safety

### A Summary

An Institute of Medicine committee said recently that, although scientific evidence gives no "special significance" to 60 as an age for the mandatory retirement of airline pilots by the Federal Aviation Administration, present knowledge is still too limited to permit a medical examination program that would detect all the aging-related changes that might be of importance to pilot safety and performance. The committee's report recommends that the FAA's required medical examinations be less frequent but more comprehensive and be updated to include the latest knowledge and technology.

"Medical problems are not a major contributor to airline accidents, according to available evidence," said the committee. However, it added that the relationship between pilot error—which is a major factor associated with accidents—and health status is "a relatively unexplored area."

The report is the first step in a response to a congressional mandate. In December 1979 Congress asked the director of the National Institutes of Health, in consultation with the Secretary of Transportation, to study several questions related to the FAA's so-called "age-60 rule." The National Institute on Aging, designated as lead agency for the study, asked the IOM for an analysis of available biomedical and behavioral evidence bearing on age-related changes in pilot health and performance. The committee was asked to refrain from making legislative or regulatory recommendations.

The ten-month study focused on three questions:

1) Is mandatory retirement of commercial airline pilots at age 60 or at any age medically warranted?

> "... (T)he committee found that variability [in the effects of aging] within an age group is often nearly as great as variability among age groups, and that usually no single age emerges as a point of sharp decline."

2) What is the effect of age on pilot performance?

> "Available evidence suggests that on the average at least some of the skills necessary to the highest level of safety deteriorate with age. However, there is great variation among individuals within any age group.... Unfortunately, reliable measures are not available for the assessment on an individual basis of some factors that may be most salient to pilot performance, particularly intellectual function and processing of perceptual information."

The committee noted the need to establish levels of function necessary for safe pilot performance and listed needs for additional research, including the effect of age-related changes on well-practiced skills and the effects of stresses such as jet-lag. The committee emphasized that analysis of existing data on pilots in general, and older pilots in particular, represents "an invaluable store of knowledge that researchers could bring to bear on the unanswered questions of age, health, and pilot performance." It recommended that data from the semi-annual medical examinations and proficiency checks be accumulated and analyzed systematically, with appropriate safeguards to protect confidentiality.

3) Is the content and frequency of the current FAA medical examination adequate?

> "In general, the current examination would be improved by taking advantage of advances in medical knowledge and technology.... The committee recommends less frequent but more careful and comprehensive medical examinations, with the content and frequency modified to match changing risks with age."

Instead of the annual resting electrocardiogram now required for all pilots older than 40, the committee recommended use of a risk-factor profile to identify those who may need more extensive testing for cardiovascular disease. It also provided specific suggestions for improvements in the screening of endocrine, pulmonary, neurologic, and mental disorders. It suggested that hearing and vision testing more closely mimic flight requirements, for example, by testing these under busy or distracting circumstances during simulated flight.

---

# BOOK REVIEWS

---

## Dr. Josephine Evarts. A Tribute.

By Eunice Trowbridge and April Radbill. 87 pages, illustrated. Copyright 1981 by Eunice Trowbridge and April Radbill. The Stinehour Press/Meriden Gravure, $7.95. (Available from the authors: 70 Brookside Rd., New Britain, CT 06052)

Josephine Evarts, although born in this century, epitomizes the rapidly diminishing group of medical practitioners who nurture the ideas of nineteenth century rural America while adapting them to the changed circumstances of our more efficient but less intimate modern life. This tribute to her life and career is offered with the same skill as Ms. Trowbridge gave in her previous memento of early twentieth century medicine, *Dr. William W. Herrick: A Measure of the Man* (reviewed in *Connecticut Medicine* 43: 528, 1979).

Josephine Evarts was born and raised in Vermont and carried the traits instilled by her New England upbringing into her Litchfield County medical practice. She seems to have transcended the glib denomination of a "quaint Yankee character" to that of a truly dedicated and capable, if individualistic, physician.

The authors document her life thoroughly and conclude with several pages of aphorisms summarizing her ideas of life and medicine. This beautifully designed and printed book will attract those interested in New England life and the history of medical practice in northwestern Connecticut.

Newington, CT M. B. OZONOFF, M.D.

### A Request for Change of Address

Notification of address change should be sent at least six weeks in advance, include both old and new address, and a mailing label taken from the most recent copy. Include your new ZIP Code number. Duplicate copies cannot be sent to replace those undelivered through failure to send advance notice.

CONNECTICUT MEDICINE
160 St. Ronan Street
New Haven, CT 06511

# Letters to the Editor

**Letters to the Editor are welcomed and will be published, if found suitable, as space permits. They must be signed by all authors, typewritten in double spacing (including references), submitted in duplicate, must not exceed 1½ pages in length and will be subject to editing and possible abridgment. To be considered for publication, letters referring to a recent *Journal* article should be received within six weeks of the article's publication date.**

## MALPRACTICE RATES OUT OF CONTROL

*To the Editor:* Malpractice premiums have now reached an unacceptable level. Twenty-seven million dollars a year is now paid in premiums by physicians in Connecticut. There has been a 200% premium increase over the past four years.

Physician run insurance companies, continuing medical education programs, and law suit prevention programs have not halted the steady increase in both the number and size of suits.

There are only three principals involved: the lawyers, the physicians, and the employers. Most of the cost of medical care is paid (via insurance) by the employers. The lawyer is obviously economically concerned and the physician is in the middle. Unfortunately, the public is unconcerned. An additional factor is that probably 30% of all physicians are on a salary and not involved, of the remainder, many pay a modest premium and are also not inclined to be involved. A small number, mainly neurosurgeons, orthopedic men, and gynecologists, are feeling the brunt of this problem. Eventually, we will all feel the pressure.

We must not expend energy devising ways to gather the money for payment but instead, we must reduce the numbers and size of suits.

What can be done?

*We must work through our state legislature and have medical malpractice cases tried before a tribunal.* Such a tribunal would be empowered to hear the case, determine the judgment, and specify the lawyer's fee. This is important for any permanent solution.

> Many will cry that this is unconstitutional, denying the citizen his rights. On the contrary, any citizen can still sue. Eliminating the lawyer's contingency fee will merely reduce enthusiasm for cases having little merit.
>
> Many will say that this is too revolutionary—but so was no-fault insurance, workmen's compensation, and even Medicare.
>
> Many will say that the lawyers won't like this—no comment.

The point is we are desparate and *have to get tough with a tough problem.*

Such a problem will need the support from organized medicine and the public. The public must become aroused and involved. Currently, the public "couldn't care less" or is uninformed. Advertisements should be put in the newspaper explaining that physicians are forced to raise their fees to cover malpractice premium increases.

The public must be urged to contact their state representatives for action. Representatives from industry as well as union leaders should be contacted to get their support for this program.

The social climate is such that people will no longer tolerate a 2-3 billion dollar yearly, nationwide, waste which does not contribute in any way to medical care.

*New Britain, CT 06052* Gregory S. Slater, M.D.

## STUDY OF CANCER IN CHILDREN

*To the Editor:* The April 1981 issue of CONNECTICUT MEDICINE carries an editorial by Dr. J.W. Meigs, the Director of the Connecticut Cancer Epidemiology Unit, which discusses an important study being undertaken on survivors of cancer in childhood. This study is a well-designed one and as Dr. Meigs points out should lead the way toward answering a number of important questions.

This study was reviewed by the Human Investigation Committee at the Newington Children's Hospital. This is a part of normal protocol for the staff physicians' participation in this study.

The Committee had a number of concerns in regard to this study which I feel are important to share with the Connecticut medical community as a whole. The study design requires interviews with former patients, their siblings, and with next of kin of patients who survived cancer at least five years, reached the age of 21 or more and died thereafter. The study protocol stipulates that patients' primary physicians be contacted to give their consent for investigators to contact patients and their families for interviews. Unfortunately, however, the protocol does not stipulate that physicians obtain patients' consent before turning over information including the patient's name, address, etc. to the study. It is the feeling of the Human Investigation Committee at the Newington Children's Hospital that the Newington Children's Hospital require that its staff physicians obtain written consent from the patients before turning over their names or any other information to the investigators. Not to do so would, in our opinion, constitute an invasion of patients' and families' privacy and would violate physician-patient confidentiality.

Further, it may well be that many of these patients, their siblings, or other family members may not have been aware that they had childhood cancer. During the 60's and 70's many children who were diagnosed as having cancer were not told of this diagnosis. It is our feeling that some means of supportive or other counseling be available to patients or their family members if they so desire. These services should address possible questions in regard to the diagnosis, anxiety in regard to present risk to others, etc. It is important that medical counseling and information be available as well as psychological support. As a part of its action leading to approval of this study at the Newington Children's Hospital, the Committee devised a plan by which our patients could receive this counseling and support if they so desire.

We would further urge that those supervising this study at a state and national level consider including the above procedures as a part of the study protocol, and that any physician who is contacted by the Connecticut Cancer Epidemiology Program Study be sure to obtain patient and/or patient's family consent before giving information to the study and also offer some form of counseling services.

Jonathan B. Stolzenberg, M.D.

*Clinical Director, Developmental*
*and Behavioral Pediatrics*
*Chairman, Human Investigation Committee*
*Newington Children's Hospital*
*Newington, Connecticut*

1. Meigs, J. Wister: A study of survivors of cancer in childhood, Connecticut Medicine 45:4, 1981.

---

## NOTICE TO CONTRIBUTORS

Members of the Connecticut State Medical Society reading papers before other organizations are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult INFORMATION FOR AUTHORS. This material may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication. Please send them to:

J. Alfred Fabro, M.D., Editor
*Connecticut Medicine*
160 St. Ronan Street, New Haven, CT 06511

Two convenient dosage forms: 100 mg (white) and 300 mg (peach) Scored Tablets

Tablets imprinted with brand name to assist in tablet identification.

Wellcome
**Burroughs Wellcome Co.**
Research Triangle Park
North Carolina 27709

NEW YORK FERTILITY
RESEARCH FOUNDATION, INC.
For the Investigation of Problems of
Human Infertility

The Foundation provides a complete diagnostic and consultation service for infertile couples. Investigations are conducted by well-known specialists in conjunction with consultants in the various fields of medicine related to infertility.

The Foundation is supported by an in-house modern laboratory equipped to do most tests required for diagnosis and treatment. Literature on request.

1430 Second Avenue, New York, N.Y. 10021
Phone: 744-5500

**Henry Miller's**
**Semi-Annual Sale**
**Now through July**

The second of only two spectacular sales is on for the month of July at Henry Miller Clothiers in the Civic Center Shops, Hartford. Fine selections of famous name American and European fashions for men and women at a savings of **30%-50%.** A savings that will probably never be better

Henry Miller

*distinctive clothiers for men and women*

One Civic Center Plaza
downtown Hartford 525-2139
Open to serve you Monday-Friday 10:00-9:00
Saturday 10:00-6:00

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## COUNCIL MEETING

### Wednesday, May 20, 1981

### Attendance

Present were: Drs. Canzonetti, Doctor, Backhus, Mendillo, Sadowski, Hecklau, James, Hess, Van Syckle, Whalen, Jr., Abbot, Petrie, Jameson, Rubinow, Magram, Freedman, Barrett, Zlotsky, Orphanos, Kaess, Shenker, McDonnell, Czarsty, Sonnen and Hayes.

Also present: Drs. Fabro and Callan; Mr. Loker and Mr. Dorsett (AHS); Mr. Tomat (FCMA); L. Randall, CSMS Attorney; Marc Sullivan, CSMS Acct.; Mr. Norbeck, Mrs. Lindquist, Mr. Brunell and Mr. Fiorentino, CSMS staff.

Absent were; Drs. Parrella, Friedberg, Anderson, Ragusa, Beck, Seide and Bobruff.

### Organizational Meeting

The organizational meeting of the Council for 1981-82 was called to order by the President, Andrew J. Canzonetti. Following some opening remarks and the introduction of Council members and CSMS staff, elections of a chairman and a Vice-Chairman of the Council for 1981-82 were held. Those elected: Chairman - Guy W. Van Syckle, Danbury; Vice-Chairman - Frederick C. Barrett, Norwich.

### American Cancer Society

It was VOTED to appoint Issac Goodrich, M.D., New Haven, to serve on a small committee of ACS to develop criteria pertaining to CT Scanners for submission to the Commission on Hospitals and Health Care.

### AMA Negotiations Seminar

It was VOTED to hold a one-day negotiations seminar in New Haven on Friday, October 2, 1981. It was also agreed that if a minimum attendance of twenty-five members cannot be attained, invitations will be extended to county medical association officers and, if further vacancies occur, members of hospital staffs.

### Report of the President

a) Professional Liability Update

President Canzonetti reported on a meeting held on May 8, 1981, with Mr. John Dorsett of American Health Systems for the purpose of initiating actions which would expedite the formation of the Connecticut Medical Insurance Company (CMIC), and the Connecticut Medical Management, Inc. (CMM). After discussion, the following resolutions were approved in order to begin the implementation phase.

1. That the law firm of Wiggin & Dana be retained as corporate counsel to expedite legal work required in the formation and licensing of the new companies.
2. That the consulting actuarial firm of Milliman & Robertson continue to be retained as the Society's actuaries in the establishment of rates, loss predictions and actuarial filings during the organization of the companies and until such time as CMIC is licensed and operational.
3. That the Council empower the Ad Hoc Committee on Management to solicit bids from insurance accounting firms and select one to be retained to work with American Health Systems during the development of the new companies and until such time as the corporation is licenced and operational.
4. That the Council of CSMS appoint an Ad Hoc Committee on Management and its Chair to perform the duties of the CMM Board as outlined in the AHS proposal for the organization of the new companies during the development phase and until the corporate board of CMIC is operational after licensure. This Committee shall consist of the Management Board as appointed by the CSMS House of Delegates, April 29, 1981, with G. Parrella, M.D., as Chairman.
5. The Ad Hoc Committee shall nominate and the Council shall appoint an Ad Hoc Committee on Underwriting of not over twelve members. This Committee shall function until the corporate board of CMM is functional after licensure, and

thereafter at the pleasure of the CMM corporate board. This Committee shall work with American Health Systems, Inc. It may also work with any other insurance companies which insure CSMS members and with the CSMS Council Ad Hoc Committee on Management in developing:

  a. Medical specialty classifications.
  b. Rating classifications for medical procedures.
  c. Guidelines for peer review of applications with previous claim history or other adverse risk criteria.
  d. Guidelines and rules for underwriting action.
  e. Guidelines and rules for appeal of adverse underwriting decisions.

6. The Ad Hoc Committee on Management shall nominate, and the Council shall appoint an Ad Hoc Committee on Claims Management of not over twelve members to function until CMIC is licensed and operational, and then at the pleasure of the CMM Corporate Board. This committee shall represent various specialties and may call on whatever physicians are needed to carry on the following functions with the Aetna, American Health Systems, such other insurance companies that insure CSMS members, and the Ad Hoc Committee on Management:
   a. Make recommendations concerning case reserving policies.
   b. Monitoring application of such policies and guidelines.
   c. Identify frequent causes of claims for underwriting and loss prevention purposes.
   d. Adopt general policies for defense counsel selection and retention and for claim defense and administration guidelines for counsel and staff.
   e. Monitor application of such policies and guidelines.
   f. Review and recommend appropriate policy forms and limits.
   g. Facilitate maintenance of effective peer review systems for claims.
7. The Ad Hoc Committee on Management shall nominate and the Council shall appoint an Ad Hoc Committee on Risk Management of not more than twelve members. The charge to this committee shall be the same as the charge made by the Council on August 14, 1980, to the Patient Injury Prevention Subcommittee, except that the Ad Hoc Committee on Risk Management shall replace the PIP Subcommittee designated by the Council in that charge. This Committee shall work with the Aetna, with American Health Systems and with such other insurance companies that insure CSMS members, and with the Ad Hoc Committee on Management, until CMIC is licensed and operational, and shall then continue at the pleasure of the CMM Corporate Board.
8. The Ad Hoc Committee on Management shall nominate, and the Council shall appoint an Ad Hoc Committee on Investment Advice and Finance of not more than twelve members to assist in the development of the CMIC and CMM. This committee shall undertake the following activities as necessary to such development;
   a. Review and recommend investment guidelines, taking into account requirements of the law, of liquidity and other relevant economic considerations.
   b. Review and advise on financial models prepared for the companies.
   c. Review and advise on general financial planning undertaken on behalf of the companies.

The contract between American Health Systems and the Connecticut State Medical Society was discussed at great length but disagreements over language have necessitated further meetings on the subject. To this end, the Council authorized the President and Chairman of the Council and other individuals requested by them to meet with members of American Health Systems and to report back to the Council at its meeting on June 25 with contract recommendations.

It was VOTED to send the Aetna a letter signed by the President requesting rate information for 1982 to be conveyed to the Connecticut State Medical Society in time for its Council meeting on June 25.

### Tort Reform

President Canzonetti also reported on a letter received from Dr. Gregory S. Slater of New Britain, pertaining to the need for tort reform. Dr. Canzonetti mentioned that he had responded to Dr. Slater that the Society was giving much thought to the need for tort reform in Connecticut and that it would most likely be reflected in the Society's legislative program for 1982.

### Miscellaneous

Due to the lateness of hour, the other items on the agenda were postponed until the next Council meeting on June 25.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on May 20, 1981. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

# IN MEMORIAM

**BALLETTO, VINCENT,** Tufts Medical School, 1933. Dr. Balletto was a general practitioner in the New Haven area for the past 45 years. He was a captain in the U.S. Army during World War II, serving in northern France and central Europe, and was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Balletto died March 28, 1981 while vacationing in Florida, at the age of 73.

**COLE, MILTON J.,** St. Bartholomew's Medical School, 1939. Dr. Cole was a internist in the Hartford area since 1945, and was associated with the Hartford Hospital, Mount Sinai Hospital and St. Francis Hospital. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Cole died May 31, 1981, at the age of 76.

**D'ELIA, PIERINO F.,** Tufts Univ. College of Medicine, 1944. Dr. D'Elia was chairman of the Department of Anesthesiology at the Hospital of St. Raphael until his retirement in June, 1980. He served in the U.S. Navy from 1945 to 1946 and 1953 to 1955, and was a member of the Connecticut State Medical Society, the New Haven County Medical Association and the American Medical Association. Dr. D'Elia died April 17, 1981, at the age of 63.

**DELVECCHIO, LEONARD, F.,** Georgetown Medical School, 1931. Dr. DelVecchio was the retired chairman of the Anesthesiology Department at St. Vincent's Medical Center, and also consultant for the Center. He was a commissioner for the department of Public Welfare and Humane Affairs Department for 10 years and a member of the American Society of Anesthesiology and the Connecticut State Society of Anesthesiology. He was also a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. DelVecchio died March 25, 1981, at the age of 73.

**DOERR, WILLIAM J.,** University of Erlangen, 1940. Dr. Doerr was a psychiatrist in the Hartford area since 1942 until his retirement. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Doerr died in Florida May 15, 1981, at the age of 72.

**HOULE, RAYMOND T.,** University of Villanova, 1928. Dr. Houle was a general practitioner in the Hartford area since 1933, and served as chief medical advisor and director of health for East Hartford schools from 1938 to 1969. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Houle died May 30, 1981, at the age of 75.

**KASCHMANN, JOSEPH,** Ludwig Maximilian, Munich, 1922. Dr. Kaschmann was a internist in the Hartford area since 1934 until his retirement in 1970. He had served as president of the medical staff at Hartford Hospital and was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Kaschmann died March 27, 1981, at the age of 83.

**MONGILLO, FRANK,** Medical College of Virginia, 1928. Dr. Mongillo was a general practitioner in the New Haven area since 1928. Besides his career as a general practitioner, he was active in many civic and veterans organizations. A World War I veteran, he was one of the charter members of Post 47, American Legion, and had served as a chairman of the Rocky Hill Veterans Home and Hospital. He was an examining physician at Yale for more than three decades and team physician for the Hillhouse football team for more than 40 years. Dr. Mongillo died April 27, 1981, at the age of 85.

**MURPHY, OWEN L.,** University of Vermont, 1921. Dr. Murphy was a general practitioner in the Hartford area since 1922 until his retirement. He was a World War I Army veteran and a former medical examiner, health officer and school physician in Simsbury, Granby and East Granby, and was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Murphy died March 16, 1981, at the age of 83.

**WHITE, ROBERT M.,** Harvard Medical School, 1939. Dr. White was a internist in the New Haven area since 1947. He was a veteran of the Army Medical Corps and served as chief of laboratory services of the 157th, 186th and 91st General Hospitals, European Theater of Operations. He was in private practice of internal medicine in New Haven from October 1947 to December 1975 and director of health for the town of Orange from 1963 until 1981, and was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. White died April 6, 1981, at the age of 67.

# NEW MEMBERS

## FAIRFIELD COUNTY

Martin C. Beirne, Ridgefield
Harvey J. Berger, Southport
Cyrus Chess, Norwalk
Robert V. Dawe, Fairfield
Walter T. Hausheer, Danbury
Edward C. Jones, Greenwich
Joshua P. Kiok, Bridgeport
Carine R. Klein, Greenwich
Charles E. Kochan, Jr., Stratford
Carolyn Koffler, Stamford
Sujatha B. Kumar, Norwalk
Steven H. Kunkes, Fairfield
Salvador B. Lukban, Bridgeport
Susan J. Maturlo, Newtown
Kenneth A. Miller, Danbury
Edward A. Pulice, Bridgeport
Benjamin D. Ramaley, Greenwich
Glenn W. Sandberg, Jr., Bridgeport
Margaret A. Sennett, Greenwich
John J. Shine, Bridgeport
Paul A. Steinman, Bridgeport
Marietta S. Vergara, Stamford

## NEW HAVEN COUNTY

James W. Adkins, Waterbury
Charles B. Beckman, New Haven
Jonathan B. Borak, New Haven
Paul C. Broomhead, Thomaston
Anthony P. Fappiano, New Haven
Lawrence R. Gluck, Derby
Richard D. Kayne, Woodbridge
Jack P. Keeve, Waterbury
Gary S. Kopf, New Haven
Richard A. Lavely, Derby
William D. Medina, Hamden
Ellen B. Milstone, New Haven
Charles J. Oestrich, Milford
Susan I. Primmer, Branford
Daniel W. Rahn, New Haven
John V. Schiavone, Branford
Vasudeva G. Shenoi, Meriden
Ronald F. Sorenson, New Haven
Steven Trobiani, Hamden

## HARTFORD COUNTY

John V. Banta, Newington
Donald R. Becker, Hartford
Rodolfo G. Bulaong, Hartford
Carl C. Chi, Hartford
Philip E. DiLeo, Hartford
Eric H. Gluck, Hartford
William G. Harris, Windsor
Marja M. Hurley, Hartford
Steven E. Isaacs, West Hartford
Wells C. Jacobson, Manchester
Vincent J. Jaeger, Hartford
Ancil A. Jones, Hartford
Shirley P. Joseph, East Hartford
Marc P. Kawalick, New Britain
Richard A. Kemp, Hartford
Bilqis Khan, New Britain
Khalid Y. Khan, Manchester
Lawrence G. Kidd, Hartford
Gene D. Kirschenbaum, Bloomfield
Charlene C. Li, Windsor
Robert G. MacDermid, III, Hartford
Paul L. Mastropolo, Bristol
Craig A. Mehldau, West Hartford
Philip J. Passero, Jr., Southington
Peter K. Schauer, Hartford
Nelson H. Shub, Southington
Paul R. Singer, Hartford
Prasad Srinivasan, Hartford
Paul P. Stroebel, Hartford
Edmund T. Suski, Hartford
Douglas G. Wilson, Hartford

## LITCHFIELD COUNTY

William A. Handelman, Torrington
Robert L. Lindenberg, Torrington
Francis A. Stratford, Jr., Danbury
Robert S. Willig, Sharon
Carlos T. Suarez, New Milford

## MIDDLESEX COUNTY

Harthattu, Aithal, Middletown
David Baggish, North Guilford
Patrick A. Lee, Middletown
Van L. Wharton, Middletown

## NEW LONDON COUNTY

Eliahu Koren, Norwich
M. Douglas Krumpholz, New London
Martin Maloney, Groton
John H. McGowan, Mystic
James Sullivan, Mystic
John Urbanetti, New London
William A. Wainright, Norwich

## WINDHAM COUNTY

Joseph More, Willimantic
Bernard E. Swanson, Storrs

# CLASSIFIED

WATERFRONT? YES! Enjoy the beauty of the Sound year—'round—Branford-by-the-sea—from your 36′ glass front living room or your 150′ beach. This most charming, immaculate contemporary home includes 3 bedrooms, 2 baths, library, family room, huge living/dining room with walk-around fireplace and wifesaver Pullman kitchen. Flying deck, stone patio. Guest cottage. $350,000. 488-1453

PRIME CONDOMINIUM medical office space in Bethel. Small Fairfield County town needs Pediatrician, Family Practitioner, OB/GYN, ENT, Urologist. Contact D. Galbo, D.D.S., 269 Greenwood Ave., Bethel, CT 06801.

**CLASSIFIED ADVERTISING RATES**

$40.00 for 25 words or less; 50 cents for each additional word.

$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.

No agency commission on classified advertising.

Closing date: Copy must be received by the first day of month preceding month of issue.

A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE.* The *JOURNAL* does not hold itself responsible for statements made by any contributor.

REPRINTS are available at an established schedule of costs. A reprint rate and order form is sent to the author with his page proofs.

ALTHOUGH all advertising material accepted is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to: *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

*CONNECTICUT MEDICINE* is the official publication of the Connecticut State Medical Society, a voluntary non-profit association organized for scientific and educational purposes, published monthly for members of the Connecticut State Medical Society.

## STATE MEDICAL ASSOCIATION DUES - 1981

| *Rank* | | *Amount* |
|---|---|---|
| *1. | District of Columbia | $495.00 |
| 2. | Wisconsin | 380.00 |
| 3. | Alaska | 350.00 |
| 4. | Idaho | 345.00 |
| 5. | Colorado | 310.00 |
| 6. | Arizona | 300.00 |
| 7. | Maine | 300.00 |
| 8. | Montana | 300.00 |
| 9. | South Dakota | 300.00 |
| 10. | Wyoming | 300.00 |
| 11. | Hawaii | 297.00 |
| 12. | Minnesota | 290.00 |
| 13. | Iowa | 275.00 |
| 14. | Pennsylvania | 275.00 |
| 15. | Washington | 273.00 |
| 16. | Michigan | 260.00 |
| 17. | California | 250.00 |
| 18. | New Jersey | 250.00 |
| 19. | West Virginia | 250.00 |
| 20. | Utah | 245.00 |
| 21. | Maryland | 230.00 |
| 22. | Georgia | 225.00 |
| 23. | Kentucky | 225.00 |
| 24. | Arkansas | 225.00 |
| 25. | New Hampshire | 225.00 |
| 26. | Nebraska | 220.00 |
| 27. | South Carolina | 220.00 |
| 28. | Oregon | 212.00 |
| 29. | Mississippi | 210.00 |
| 30. | Delaware | 205.00 |
| 31. | Illinois | 203.00 |
| 32. | Louisiana | 200.00 |
| 33. | Massachusetts | 200.00 |
| 34. | New York | 200.00 |
| 35. | North Dakota | 200.00 |
| 36. | Texas | 200.00 |
| 37. | Ohio | 195.00 |
| 38. | Indiana | 181.00 |
| 39. | Oklahoma | 180.00 |
| 40. | Alabama | 175.00 |
| 41. | Florida | 175.00 |
| 42. | Rhode Island | 175.00 |
| 43. | Nevada | 160.00 |
| 44. | Vermont | 160.00 |
| 45. | Connecticut | 150.00 |
| 46. | Kansas | 150.00 |
| 47. | New Mexico | 150.00 |
| 48. | Virginia | 150.00 |
| 49. | North Carolina | 140.00 |
| 50. | Puerto Rico | 140.00 |
| 51. | Tennessee | 130.00 |
| 52. | Missouri | 115.00 |

*Medical Society of District of Columbia functions as both State and County Medical Society.

Median Dues - 1981 - $220.00
- 1980 - $200.00

Figures from AMA Office of Membership Development.

**Three Stone Ring**

Exquisite Colombian Emerald
flanked by two brilliant
diamonds, in 18k gold
$9,500.

LUX BOND Green & Stevens
FINE JEWELERS SINCE 1903
AGS

**HARTFORD** 15 Pratt Street, 278-3050
**WEST HARTFORD** 60 LaSalle Rd., 236-5811

TAX SHELTERS

*Municipal Tax Free
Bond Funds*

MONEY MARKET - STOCKS

*For individuals and
Professional Corporations*

*DEAN WITTER REYNOLDS*
One investment firm
you'll be glad to hear from.

ONE FINANCIAL PLAZA
HARTFORD, CT. 06103
*Call 247-7200 or 1-800-842-1119*

John M. Gothers
*Associate V.P., Investments*

AYR INSURANCE AGENCY

JANIS AYR ESPOSITO ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY
THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### ANESTHESIOLOGY

Anesthesiologist—board certified preferred—to join three M.D.'s in new P.C. Reply by sending CV to Allen W. Fanslow, M.D., 31 Bridgeview Place, Stratford, CT 06497.

### FAMILY PRACTICE

Large adult medical practice now available for immediate sale in New Haven county. Yale-affiliated hospital. Includes offfice and x-ray equipment. Send CV to CSMS/GP-ERH.

For sale—Medical Family Practice. Five exam rooms fully equipped with lab. 2,000 sq. ft. of space. Central CT community location. Contact Mrs. Michael Gualtieri, 55 Forest Ridge Rd., Waterbury, CT 06708.

Opportunity for a young Family Practitioner to take over an active practice on a cost sharing basis. Present Family Practitioner wishes to retire gradually over the next two years. Call 1-203-443-3778.

Solo practice available. Retiring from practice. No charge and equipment free. City located between New Haven and Hartford. Contact CSMS or call 235-0096 after 6:00 P.M.

Well-established family practice of recently deceased physician available. Located in the suburbs of the nation's capital in Arlington, Virginia. Fully equipped office. Please call Mrs. T.A. Moneymaker at (703) 892-5128.

Family practice or internal medicine: Immediate opening for primary care physician to join same in waterfront Connecticut. Community and/or University Hospital teaching opportunities. Subspecialty interests encouraged. Send resume and salary requirements to CSMS FP-IM/JRS.

### GENERAL SURGEON

Established, incorporated, General Surgeon in small Connecticut community desires young associate, preferably with some thoracic and vascular training. Plan for early takeover. Reply to: CSMS SUR/JL.

### OBSTETRICS AND GYNECOLOGY

OB/GYN: Board certified or eligible to practice with young certified OBS/GYN in northwest CT. Salary followed by partnership. Send curriculum vitae to CSMS/OB-GYN(MRT).

### OPHTHALMOLOGY

Connecticut Ophthalmologist seeks a qualified associate. Please contact CSMS/OPHTH.-SAM.

### ORTHOPEDIC SURGERY

Two Board- certified Orthopedic Surgeons presently engaged in general orthopedics in Waterbury, CT. Interested in adding new member to organization. Write CSMS/Ortho/MOG.

Well established Board-certified Orthopedic Surgeon in Waterbury, Connecticut, is seeking associate. Attractive practice. Excellent opportunity. Send resume to CSMS/Ortho/V.T.

### OTOLARYNGOLOGIST

Excellent opportunity for Board Eligible or Board certified otolaryngologist in a one man otolaryngology practice. First year salary guaranteed, including malpractice insurance. Attractive Connecticut College community with modern hospitals. Modern office with latest equipment. Qualified staff, including x-ray technician, certified audiologist and ENG technician. Write CSMS OTOL/HS.

### PEDIATRICS

Pediatrician needed—Board Eligible/certified, in North-eastern Conn. near U Conn, to join established solo practice. Available now; negotiable. Send CV to CSMS/PED-JSL.

### RADIOLOGIST

Part-time association for competent and personable Radiologist. No special expertise necessary. Hospital practice in central Connecticut. Write CSMS RAD/JFH.

### SCHOOL PHYSICIAN

Part-time school physician to examine students participating in athletics. Set own hours. Contact Ralph E. Hughes, Bullard Haven Tech. School, Bdgt. Tel. No. 579-6129.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### ANESTHESIOLOGY

April '81. Age 40. Currently in practice. Nat'l bds. AB-Elig. MD Pahlavi Univ. Med. School. Int: Bridgeport Hosp.; Res. NY Hosp., Cornell Med. Ctr. Interested in solo, group, assoc. or institutional type of practice.. Contact CSMS/ANES.(PJ).

### DERMATOLOGY

Sept. '81. Age 34. MD: Univ. of Manitoba, Faculty of Med. Int: Health Sciences Ctr. Nat'l Bds. Certified AB. Presently in practice. Will consider all types of practice except solo. Burrell H. Wolk, M.D., 4277 N. Miller Rd., Scottsdale, AR 85251.

### EMERGENCY MEDICINE

July '81. Age 30. Nat'l bds. MD Dalhousie Univ. Med. School. Int. Dalhousie Univ. Res: Radiology, St. Vincent's Med. Ctr. Interested in part-time ER or Clinic Work in the evenings or weekends. Write: Carl R. Makarequiz, M.D., 165 Alexandria Dr., Stratford, CT 06497.

### FAMILY PRACTICE

Available immediately. Age 29. MD Cornell Univ. Med. Coll. Res: Montefiore Hospital; 3 yr. Family Practice. Nat'l bds, certified AB. Currently in practice. Group, Associate and Institutional practice desired. Background in teaching and administration. Looking for Primary Care full-time position. Allan P. Olivieri, M.D., 123 W. 80 Street, New York, NY 10024.

July '82. Age 27. MD: Case Western Reserve U. Int: No. Carolina Baptist Hospital, Bowman Gray School of Med. Res: North Carolina Baptist Hospital. Passed National Boards. Seeking group or associate practice. Write: Paul D. Harrington, 3826-L Country Club Rd., Winston-Salem, North Carolina 27104.

## INTERNAL MEDICINE

Available immediately. Flex. Age 31; AB-Elig.; MD S.N. Medical Coll., India; Int. Mount Sinai Hospital, Hartford; Res. The Hospital of St. Raphael. Interested in group, assoc., institutional and industrial practice. Write CSMS/INT/AKD.

July '81. Age 31. MD: SUNY Downstate. Int & Res: Boston City Hospital. Nat'l Bds. Certified AB. Group practice. Cardiology. Has extensive training in all invasive and non-invasive procedures. David Flitter, M.D., 113 Maple Ave., Shrewsbury, MA 01545.

May '81. Age 34. MD: SUNY Upstate, Syracuse. Int: Beth Israel Med. Ctr., NYC; Residency, Norwalk Hospital, Norwalk, CT; Lic. CT. Passed National Boards. Certified American Board. Interested in solo, group, institutional or industrial practice. Write CSMS IM/WRS.

June '81. Age 61. MD: NY University. Int: Bellevue Hospital. Res: Hospital of the Rockefeller Institute. Nat'l Bds. AB Eligible. Interested in working as a physician for an insurance company. Institutional practice. Contact CSMS/IM/HFW.

## NEUROLOGY

Sept. '81. MD: Med. Sch., U. of Poznan, Poland. Int. & Res: U. Hospitals, Poznan. Fellowship: Western Reserve U., Cleveland; Emory U., Atlanta, GA. Res. in Neurology and Physical Med: McGill U., Montreal. Elig. Amer. Bd. Pref. mixed type of practice, partly institutional, partly private practice in physical med. & rehab, in neurology or both, including electromyography. Write CSMS N/BEK.

Aug 1, '81. Age 31. MD: College of Phys. & Surgeons. Int: Beth Israel Hospital, NY. Res: Albert Einstein, NY. Fellowship: Neurological Institute, NY. NB and Elig. for AB. Will consider solo, group, associate or institutional practice. Experience in EMG, EEG, VER and would like to incorporate them into my practice. Write: Walter L. Nieves, M.D., 57 Elmwood Place, Short Hills, NJ 07078.

## OBSTETRICS AND GYNECOLOGY

July 1, '81. Age: 29; Nat'l bds; AB-elig; MD Loyola Univ., Stritch School of Med., Chicago; Int. Michael Reese Hosp. & Med. Ctr., Chicago; Res. Michael Reese Hosp. & Med. Ctr. Interested in group or assoc. practice. Write: Karol J. Chacho, M.D., 1170B Bunker Hill Court, Wheaton, IL 60187.

Sept. '81. Age 52. Currently in practice. AB-cert. MD National Univ. of Ireland. Int: St. Elizabeth's Hosp., NJ. Res. Hospital of St. Raphael. Interested in Institutional and Industrial/Insurance practice. Contact CSMS/OB-GYN (FJH).

Flexible. Age 30. MD State Univ. of NY. Res: Long Island Jewish-Hillside Med. Ctr. Nat'l bds. AB-elig. Prefers group or assoc. practice in Southern Conn. or shore area. Write CSMS/OB-GYN (DAZ).

July '81. Age 31. MD: Lady Hardinge, New Delhi, India. Int: U. of Delhi Hospital. Res: New York Infirmary Hospital (3 years). Eligible AB. Seeking solo, group or associate practice. Contact M.B. Agrawal, M.D., 318 E. 15th St., Apt. 6A, New York 10003.

## ORTHOPEDICS

July '82. Age 28. Nat'l bds; AB-elig.; MD Creighton Univ., Omaha, NB; Int. and Res. University of Michigan. Solo, group or associate practice preferred. Write, Cary I. Skolnick, M.D., 2250 N. Circle Dr., Ann Arbor, MI 48103.

## OTOLARYNGOLOGY

July '81. Age 31. MD Andhra Med. Coll., India; Int. and Res. New Britain Gen. Hosp. Eligible AB. Solo, group or Assoc. practice. CSMS/OTO—RVD.

## PEDIATRICS

June '81. Age 31. Currently in practice. Nat'l bds. AB-cert. MD G.S. Medical College, Bombay. Int: K.E.M. Hospital, Bombay. Res. Kings County Hosp., NY. Fellowship: New York Hosp./Cornell Med. Ctr. & Mem. Hosp./Sloan-Kettering Research Inst. Pediatric Hematology/Oncology. Solo practice. Write Dipak S. Banker, M.D., 111-22 66th Ave., 1A, Forest Hills, NY 11375.

July '81. Age 29. MD: Sydney U., Sydney, Australia. Int: Jacobi-Einstein, Bronx, NY. Res: Misericordia Hosp., NY. Passed National Board. Eligible, American Boards. Interested in group, associate or institutional practice. Write: Evelyn Rosemarin, M.D., P.O. Box 553 WCMC, Valhalla, NY 10595.

## PSYCHIATRY

July '81. Age 70. MD: U. of Barcelona, Spain. Int. and Res: U. of Barcelona. Passed Nat'l Boards; Certified Amer. Bds. Seeking group, associate or institutional practice. Write CSMS PSY/FM

## RADIOLOGY

Nuclear Medicine: Available July 1, '81. Age 29. Passed Nat'l bds., eligible AM. MD: U. of Pittsburgh. Int.: Presbyterian U. Hospital, Pittsburgh. Res.: Allegheny General Hospital, Pittsburgh. Fellowship: Nuclear Medicine, Emory U. Hospital, Atlanta, GA. Experience in all aspects of Nuclear Medicine—imaging, nuclear cardiology, RIA, etc. ABNM, ABIM-eligible. Write Margaret M. LaManna, M.D., 902 Oakdale Road, N.E., Atlanta, GA 30307.

## SURGERY

Available immediately. Age 36. Presently in practice. AB-cert.; MD University of the Philippines; Int. Brooklyn-Cumberland Med. Ctr.; Res. Brooklyn-Cumberland Med. Ctr. Interested in solo, group or institutional practice. Contact: Romulo L. Genato, M.D., The Brooklyn Hospital, 121 Dekalb Ave., Brooklyn, NY 11201.

July '81. Age 36. FLEX. AB-eligible. MD: Assam Medical College, India. Int.: Misericordia Hospital, NY. Res.: St. Clare's Hospital, NY. Looking for group, associate or institutional practice. Write Bijoy B. Sarmaroy, M.D., 631 E. 235th St., New York, NY 10466.

July '81. Age 34. MD: King George's, Lucknow, India. Int: U. of Lucknow Hospitals. Res: N.Y. Univ. and NY Infirmary Hospital 1976-80. Part 1 of Amer. Bd. Seeking solo, group or associate practice. Contact R.M. Agrawal, M.D., 318 E. 15th St., Apt. 6A, New York 10003.

July 1, '81. MD: Seoul Nat. U. Medical School, Seoul, Korea. Int: Passaic Gen. Hosp. Res. 3 years at Englewood Hosp., NJ; Res. 1 yr. Memorial Sloan-Kettering, NY; Res. 2 yrs. at St. Mary's Hosp. Waterbury, CT. Elig. AB. Interested in solo, group or associate practice. Write: Jin-Young Lee, M.D., St. Mary's Hospital, 56 Franklin St., Waterbury, CT 06702.

July '81. Age 32. MD: Govt. Stanley Medical College, Madras, India. Int. and Res: St. Francis General Hospital, Pittsburgh, Pa. Fellowship: St. Francis General Hospital. Passed Flex, Part I, American Board of Surgery. Seeks associate, group or solo practice. Contact Nagamalli Ramakrishna, M.D., 302A Glen Douglas Drive, Glenshaw, Pa. 15116.

July '81. Age 40. MD: Haiti College of Medicine. Int: Harlem Hospital. Res: Harlem Hospital and St. John Episcopal Hospital. Fellowship in cardio-thoracic surgery, St. Francis Hospital, Long Island. Eligible for American Board. Interested in solo, associate or institutional practice. Experience in oncological surgery, traumatic surgery, hyperalimentation and vascular surgery. Write Jean Albert Midy, M.D., 99-18-222nd St., Queens Village, New York 11429.

July '81. MD: Prince of Wales Med. Coll. Patna, India. Int: Catholic Med. Ctr. of Brooklyn & Queens, NY. Res: Patna Medical College & Holy Family Hospital, Patna, India; Catholic Med. Ctr. of Brooklyn & Queens; College of Medicine of New Jersey. Fellow: Arizona Heart Institute, Phoenix, Arizona. Seeking solo or associate practice in general surgery-vascular surgery. Write: Amitava Ghosh, Apt. #135, 1645 E. Thomas Rd., Phoenix, AZ 85016.

# A Summer's Reading: Virginia Woolf and Her Granddaughters

M. THERESE SOUTHGATE, M.D.

### Introduction

In the beginning, it seemed unplanned, like the lazy days of summer. I simply read whatever came to hand and promised to be interesting. But toward the end of the summer it turned out that the selections had not been so random after all. Four of the books were about women, and they spanned three generations of what women have felt about themselves and their place in the context of society. It became evident that what is happening in the women's movement today has happened in the past and what has happened in the lives of women in the past is still happening today. What is happening and what has happened affects profoundly not just women, however, but both sexes. Finally, in the narrower context, what is happening today and what will happen to women in medicine affects not just men and women in medicine, but medicine itself, now and for the future.

### A Room of One's Own

The first book takes up some 50 years ago. In it Virginia Woolf asks a question: why are women not better known as writers: why are there, for example (excepting Jane Austen and Emily Bronte), no Charlotte Dickenses, no Thomasina de Quincys, no Wilhelmina Shakespeares. And then, with her fictive companion Mary Beton, she ambles in and out of the corridors of her mind, examining first this thought, then that, turning each new idea around, upside down, inside out, until after she has meandered through all the courts and quadrangles of Oxbridge, and the British Museum, as well as her private library, she reaches an inescapable conclusion: if women are ever to write great fiction (ie, neither "womanly" nor "manly" fiction), they need two things: a room for one's exclusive use, with a lock on the door, and an income of £500 a year. Let no one mistake Virginia Woolf's meaning: the room and the income are not only or even primarily symbols—the money standing for the power to contemplate and the lock on the door for the power to think for oneself. The meaning is literal as well: "Intellectual freedom depends upon material things," she says.

### The Second Sex

But that was 50 years ago. Today many of Virginia Woolf's would-be daughters—and certainly her granddaughters—have the room with the lock on the door and the 500 a year. Even in her own time, some women, as Woolf notes, had made a start toward this freedom. Most conspicuously there was Florence Nightingale in the midnineteenth century, and sixty years later even some of the "average" women had these freedoms. What is impressive, however, is that these gains were due not so much, if at all, to any sense of "justice" toward women as to a certain curious fallout of injustice toward all: war, the Crimean War and World War I. We shall see more of this later.

In the meantime, let us leave Virginia Woolf with her independent income and her room of her own and look into what her daughters are doing. It is 1949 and another literary classic has just been published, this one not in England, but in France. Curiously, we are also at the end of another war, World War II.

Simone de Beauvoir's *The Second Sex*, first published in Paris in 1949 and four years later in America, remains one of the pillars of the women's movement. It is indispensable for its thoroughness, scholarship, and especially for the perspective it provides to the history of women.

De Beauvoir's thesis is simple and straightforward: woman are "secondary" creatures who are defined in relation to a standard that is the male, just as in antiquity the oblique was defined in relation to how it compared to the vertical. But this "relative to" defini-

---

M. THERESE SOUTHGATE, MD Deputy Editor, Journal of the American Medical Association, Chicago, IL.

tion is not a natural characteristic of women, but is rather the heritage of a milieu in which the cultural, legal, and economic traditions have been shaped by men, with all of the consequences thereof to both sexes.

Like Woolf, de Beauvoir sees freedom as the essential quality that has been denied women. Like Woolf she also sees this lack of freedom as rooted in economics. And whereas once it was customary for a woman to be financially dependent on her father until he transferred this dependency to her husband, now, since World War II, a woman may assume the primary financial support for herself—though it need hardly be added, she will not usually attain the economic standard a husband could provide.

Still, a start is a start, and with a little money of her own, de Beauvoir's generation can afford the luxury of pondering some philosophic questions as they go about their jobs: Why, asks de Beauvoir, should a woman be defined in relation to a man? Why is the world peopled by men and by "not-men"? Why cannot men and women rather exist at once autonomously and in reciprocal roles?

### The Executive Woman

And with Simone de Beauvoir and her generation pondering these questions, we come ahead again, onto another generation and meet de Beauvoir's daughters, the granddaughters of Virginia Woolf. This time we are in America, it is the end of the '70s and two more landmark women's books have appeared. The one concerns women in business, especially those aspiring to the upper levels of management; the other concerns women in the professions, specifically those in medicine.

The first, *The Managerial Woman*, is one of the most important books in women's studies published recently. It is the result of a study conducted by Margaret Hennig and Anne Jardim, management consultants and directors of a graduate program in management for women. The core of the study is a group of 25 women who by 1970 had reached upper management levels in business and industry. (Interestingly, these women had all begun to work during the Great Depression, moved into middle management positions during World War II, and thence into their current positions.) Hennig and Jardim study the lives and career histories of these 25 women and conclude that although all were effective in their work, were rewarded by a sense of personal success, and retained their own sense of self-worth as well, still the price may have been too high—not only for the women, but for the men as well. Moreover, the equal opportunity laws of today can never be expected to give women more than a key for unlocking the door to the executive suite. Beyond this is another door with a far more intricate lock which no law can ever fit. Nor will mere technical competence open the door—though it may get one a post *at* the door, namely, a supervisory as opposed to a managerial position.

No, if one is to open this second door and actually enter the suite, the key will not be found among laws at all. Rather, it is the ability to recognize certain fundamental differences in perception that men and women have about mangerial positions, responses, and behavior. Most important is the recognition that it is of little consequence to anyone what the cause of these male-female differences are—whether, for example they are due primarily to nature or to nurture. The fact is that the differences exist. But, business organizations as we know them today have been founded and developed by men, and therefore the bias has (rightly) been toward making men, not women, feel comfortable. As a result of the tradition a kind of informal system of relationships has grown up that is firmly rooted in this male culture. The higher the level of management the more deeply do these roots extend. Thus it is that although the law may require that new members (women) be admitted to the club, the "old boys" can manipulate the rules so that the law is complied with—but the status quo is not at all changed. However, as Hennig and Jardim quickly point out, this is neither right nor wrong, good nor bad. It simply is.

For example, if the law were changed tomorrow to say that each pro football team must have at least two female members, then each team would draft two women, and they would fight to get the best. But since winning is what football is about it is unlikely that these two new members of the squad would ever leave the bench. On the other hand, whether this female right-guard spends the entire season on the bench or not she is nevertheless expected to be ready at all times, to know all the plays and all the rules and she is expected to support each member of the team. She will have a rough time, but a start is a start; only when a woman knows what the rules are and has lived by them can she ever hope to bend them a little in her own favor. This is where it becomes important for men and women to become more aware of each other's perceptions about the male-female work rules. G.B. Shaw capsuled the men's complaint in the words of Professor Higgins: "Why Can't a Woman Be Like a Man?" The answer to that is exactly what Virginia Woolf and Simone de Beauvoir and Hennig and Jardim have been trying to give: She cannot.

### Doctors Wanted?

"But what if," muses Virginia Woolf, "through their incapacity to play football women are not going to be allowed to practice medicine—"

And this brings me to the last of the seemingly random selection of summer reading that turned out to be not so random after all: *Doctors Wanted: No Women Need Apply* by Mary Roth Walsh. Walsh's book in an account of the sexual barriers women in the medical profession have faced over a period of nearly 150 years, from 1835 to 1975.

The stories of the struggles of women to gain admittance to medical schools in 19th-century America are familiar to most physicians—the stories of the Blackwells, the Hunts, of Maria Zakrzenska. In Walsh's hands, however, the story becomes less of a romantic tale of victory over all odds and more of the story of what it was: struggle, frustration, artifice, even the faintest odor of chicanery, all strung together across the decades like beads—not of delicate perspiration—but of sweat and tears. These women devoted their entire lives to obtaining only what the 19th-century American man received as his birthright, and even when they received it it was considerably diminished and dulled.

But again, a start is a start and 150 years after Harriot Hunt and her sister, Sarah, began their practice as the first two "female physicians" in Boston, there were some 30,800 women physicians in this country, accounting for just over 8½ percent of the total physician population. Compare this with the less than the 4½ percent of the total physician population of Virginia Woolf's generation (1930) or the just over 6 percent of Simone de Beauvoir's generation (1950). With such a consistent growth rate of 2 percent a generation, it could be said that we are making progress, but consider for a moment how many generations that would take to reach 50 percent, or 25 percent—or even 10 percent!

Thankfully, however, humans do not advance in linear progression and so in just the decade of the '70s women jumped from 9 percent of all students in medical schools to 24 percent by 1977. Truly the sexual barriers have been destroyed. Truly women in medicine, especially the younger women, have entered the Golden Age—an age where Hippocrates' sister has just as much a chance of ministering to the dying Pericles as did Hippocrates. Or is it possible that, like the age that perished with Pericles, this Golden Age of women in medicine can also disappear? Walsh thinks it can. I think she is correct. Indeed, one such Golden Age disappeared in the first half of this century. In Boston in 1900 more than 18 percent of the physicians were women; by 1960 less than 6 percent of Boston physicians were women. What went wrong? Can it go wrong again? That depends on what we can learn from history.

Hennig and Jardim developed their thesis by studying the careers of successful women managers. Walsh, on the other hand, tries to explain why, in the case of women physicians, "*there are so few careers to study.*" (Italics hers) It is "sex discrimination," she says, that "has prevented significant numbers of women from entering medicine and simultaneously has seriously obstructed the advancement of the few women who were admitted to the profession." Unlike Woolf, who peregrinates about the chambers of her mind in search of an answer to why so few women write fiction, Walsh, homes directly on the reason why so few women study medicine (and why, despite their gains at the turn of the century, women were not able to hold them): "The medical establishment," she says "has made a conscious effort to minimize the number of women physicians."

But why then if women physicians had made such gains in the late 19th century, can this be true? Surely, it must be that the women themselves are simply not interested in becoming physicians? Walsh vigorously challenges this oft-repeated thesis, and it is here that we come to the core of her thesis: *Sexism exists today in medicine because women have never been able to exert real power in medical institutions. They have, in other words, never established a power base.* (Italics mine) Which is what Hennig and Jardim were saying above about a similar pattern of exlusion of women from top management (and hence policy-making) positions. One way of stating the problem is to say that women are excluded because they are not fit. Another way is to say that women have never become fit because they are excluded. In either case we are going to choke on that somewhat unpalatable word, "sexism," until one realizes that this sexism is not personal. It is institutional—although it manifests itself only through persons and against persons. Therefore if women are to keep these new gains of the seventies and are to advance besides, they must fight this sexism through the institutions. In short they must acquire institutional power.

But, alas, as Virginia Woolf's Mary Beton would have asked, "Where indeed are women to get this power that they do not have?" Surely no national medical institution is going to select its president by affirmative action. Nor for that matter will Standard Oil select its chief executive officer nor will the U.S. House of Representatives elect its Speaker by any but the traditional means already established. While this does not in theory exclude women, it is nevertheless pretty effective in doing so. The situation is analogous to that of the college graduate who, armed with a degree in liberal arts and a major in English literature, happily goes forth to find a teaching job only to learn that all the teaching jobs require not only a degree, but a minimum of a year's experience. And so the graduate cannot get a job without experience and cannot get experience without a job.

According to Walsh there are three ways in which women may expand their institutional power base. The first is to work with existing (male) institutions such as medical societies, hospitals, and medical schools in policy-making areas. Although some women will do well here there are also many difficulties for if we are admitted at all, then we run the risk of falling victim to the "solo-woman syndrome": Lots of stress but little real power. The second way is to build on the existing medical woman's organizations at the local, regional, and national levels. Once rather strong organizations, they were weakened when women, after the first blush of success, no longer saw any need for such separate organizations. What these women overlooked was that these societies are a training ground for leadership and, at the moment, the only obligatory leadership school we have. And finally, there is the currently existing women's movement. It is probably not coincidental that the feminist movement of the nineteenth century and the increased number of women physicians paralleled each other. Nor can it be considered a coincidence that as Walsh also notes, the sharpest rise in numbers of women admitted to medical schools, from a static 9% to 10% of all students in 1964-70 to more than 24 percent between 1970 and 1977 followed the filing of a class action complaint against all U.S. medical schools by the Women's Equity Action League (WEAL) in October 1970.

### The End of Summer

And so I reached the end of my so-called haphazard summer reading and found the books had not been randomly selected after all. I have tried to give a little of what each of the authors thought about. But I also said that these four books had in common only that they were written by women about women. Beyond that, they are quite different. Virginia Woolf, for example, was not concerned about marriage, or medicine, or women in the executive suite, but only about why so few women wrote fiction. Simone de Beauvoir, on the other hand, some twenty years later, was concerned about marriage, but not about female fiction-writers (she, after all, was one), nor about managerial women, nor about women physicians. Finally, Hennig and Jardim and Walsh are not concerned either about the question of marriage or about women fiction writers. They are concerned about how women get into the top ranks of management and why there are still so few women physicians.

Still, in spite of their superficial differences the books were actually of a piece. And this is where we come full circle, back to Mary Beton and the wisdom of our grandmothers: Virginia Woolf wasn't writing about women fiction writers at all. She was writing about—just as were Simone de Beauvoir and Hennig and Jardim and Walsh—about women and autonomy. For if a woman is to have this freedom that is her birthright, then she, too, must have the possibilities of financial security, a private place to be by herself, the opportunity to be a member of society and not simply half a couplet, the opportunity to learn the rules of the game and to scrimmage with the other players, and finally, the institutional power that will give her a voice in making the rules.

In the beginning I said that what is happening to women today is affecting profoundly not just women, but men as well. Only when a woman has a full measure of freedom and independence does she then have the freedom to forget that she is a woman—which, paradoxically, enables her to be more a woman—and because men and women are not pairs, but complements, a man can be equally more a man.

I also said that what is happening to women in medicine today affects not just women and men in medicine, but medicine itself, now and in the future. Is it too fanciful perhaps to project ourselves ahead once more and watch our grandsons as they practice medicine? Will we be watching our granddaughters as well? And what will have happened to this profession of today where we are no longer physicians, but deliver health care to consumers (and often in measured quantities as well), and where medicine is no longer a profession, but a health care industry?

Perhaps if we, the granddaughters of Virginia Woolf, see to it that our granddaughters will not only practice medicine but will also share equally with our grandsons in the institutional power of our organizations, we shall yet be able to retain at least a measure of the personal relationship and longterm personal commitment that is essential to good medical care.

But alas, Virginia Woolf is dead these many years and hardly anyone is even afraid of her anymore, let alone bothering to listen to her. Still, when she said that two sexes are necessary for *everything,* she may just have stumbled across something very profound.

# A Woman Psychiatrist's View of the Challenges of Professional and Family Responsibilities

REBECCA Z. SOLOMON, M.D.

It is sometimes assumed that a woman's view of the challenges of professional and family responsibilities are very different from a man's. I do not believe this assumption is valid. In this paper, I will present my reasons for questioning it, my views of the issues on which it is based, and the effect which I believe gender can and does have on a person's attitudes and behavior.

Gender influences experiences and personality but it is not so overriding a factor as to be the most significant determinant of either the manner in which a person functions or of his or her point of view. The assumption that there are major differences in attitudes toward professional and family responsibilities is based on notions about masculinity and femininity which are associated with gender stereotypes. These stereotypes have an impact on everyone. Each person's life is influenced by the degree to which he or she accepts or rejects them. I will indicate by a brief review of some personal experiences the way in which stereotypes influenced me and I will follow this by some general comments about the relationship between gender stereotypes and role expectations which are based on my experience as a psychiatrist and psychoanalyst.

As far as I know, my wish to become a doctor had two major determinants, both of which were associated with interactions in my family. Though my parents were caring and kind, I sensed a tension between them because, it seemed to me, my mother was expected to defer to and depend on my father to a degree that seemed unreasonable and unnecessary to me. I hoped that I might be more independent than my mother and that my relationship with my husband would be that of equals. The other determinant was the illness of my youngest sister. When she was very young, she suffered severe bouts of abdominal pain which immobilized her at times. When she was about three, a ruptured ovarian cyst was removed. Following the surgery she was an active child who was no longer invalided and in pain. I was so impressed by these events that I decided I would like to be able to relieve suffering as my sister's doctor had.

In high school and college, science intrigued me and for a time I thought I might assuage my curiosity about the working of the human body and gratify my desire to alleviate suffering by pursuing a career in basic science, but circumstances, economics and geography led me to return to my original choice—a career in medicine. During high school and college, I lived at home. My parents viewed my interest in science with puzzlement and their attitude puzzled and amused me. I can still see my mother shaking her head with concern when she viewed the specimens with which I cluttered my room and when she smelled my clothes impregnated with chemicals and muttering something like you'll never get married if you carry on like this. But I also remember the pleasure and pride which both she and my father took in my determination and accomplishments. I have repeatedly encountered - and still do - this mixed attitude of disapproval and admiration. Disapproval because of my violation of the notions of what a woman is supposed to be - i.e., passive and submissive and admiration for my willingness to accept the challenges which inevitably accompany self-assertion.

I shared some of my parents' doubts about the propriety of my ambitions and might not have embarked on a medical career unaided. The moral and financial support I needed was supplied by my husband. In spite of or maybe because of my mother's admonition that I would suffer the fate of spinsterhood, I married during my junior year in college a physician with whom I had become acquainted while engaged in medical research during a summer vacation. Although unlike my parents whose support for my interests was covert, he openly fostered my efforts. Nevertheless, as might be expected, tensions did arise when the de-

---

REBECCA Z. SOLOMON, M.D., Training and Supervising Analyst, Western New England Institute for Psychoanalysis; Supervisor of Psychotherapy, Institute of Living, Hartford, Ct., Clinical Professor Psychiatry, University of Connecticut School of Medicine, Farmington, Past President, American Psychoanalytic Association.

This is a revised version of a paper which was presented at the Connecticut Psychiatric Society conference on "The Psychiatrist: The Challenges of Professional and Family Responsibilities" January 27, 1979.

mands of being a medical student and later a practicing physician conflicted with the expectations we both had of my role as a wife. We struggled with the definition of our roles and with the feeling that I was in the wrong because I was not more available. It was difficult to counter the notion firmly and prevalently held at that time that a woman's goals were always secondary to those of her husband's and that a woman who chose a career was peculiar if not suspect. That attitudes have changed is indicated in the increasing number of women engaged in medical and other traditionally male activities, but the conflict between personal and professional activities continues.[1]

Child care poses the greatest challenge in the area of family responsibility to the woman who chooses a career. The problem is not only that children require and demand a great deal of personal attention - some of which can of course be provided by other persons but also that the mother wishes to spend time with her children. We know that care of children can become oppressive, but we also know that the woman who has little time for her children feels deprived. Participating in the growth of children can be exciting and rewarding and surprisingly nurturant. Each woman has to work out for herself the balance between professional and personal commitment which suits her needs. For me it was important to combine a career in psychiatry and psychoanalysis with child care and domestic responsibilities.

I have frequently asked myself whether my motivation to become a psychiatrist and psychoanalyst differed from that of my male colleagues and whether and to what degree my capability and interest in the field are determined by my gender. As I have indicated, I was motivated to study medicine by a combination of competitive strivings, caretaking desires and intellectual curiosity. As I have listened to and observed my male colleagues, I have found that their interest is also based on these factors. I also believe that neither my approach to my patients, my view of my professional responsibilities, nor the manner in which I execute them can be distinguished along gender lines. My agreements and disagreements with colleagues are not related to gender but rather to our perspectives on psychiatry and psychoanalysis.

My experience does not support the view currently held by some, that the therapist should be of the same sex as the patient but rather conforms to the view of those who have been unable to demonstrate sex-related biases in therapists.[2, 3] Psychiatrists may have biases about sexual roles and these biases may influence treatment, but both men and women may hold similar views and be biased in the same direction. Patients have come to me because I am a woman and this fact influences their expectations from their contact with me. Their expectations reveal their sexual bias and this becomes an issue in treatment. Comparison of my experiences with patients with those of my male colleagues has indicated that the problems with which we deal are similar. When I have had the opportunity to discuss with a male colleague a patient whom we have both seen either in evaluation or treatment our views are often congruent and our differences are based not on gender but on our knowledge, background and perspective.

Yet of course there are differences between men and women. The issue is not whether or not there are differences, but whether or not and to what degree these differences influence personality and competence to engage in a variety of tasks. We do not have the answer to this question,[4] but we have some suggestive observations which can help us understand the origin of the prevalent stereotypes and can guide us toward a more comprehensive view of the effect of gender on psychological functioning.

Throughout history the attitude toward woman has been ambivalent. Woman has been worshipped either as an earthy, life-giving goddess or as a virginal mother, unencumbered by desires of the flesh. She has been revered as a gentle caretaker, demeaned as an inferior person and feared as a destructive bitch and witch. To try to comprehend these contradictions requires an excursion into the fields of depth psychology, sociology and theology on which we cannot embark at this time. But it is important to keep these contradictions in mind as we try to understand contemporary views of women.

Many discussions of female psychology invoke Freud's views on the subject. They have been severely criticized by some. In attempting to evaluate his position, we must remember that the women whom he analyzed brought to his couch the views about femininity which were prevalent at the time and that these views also influenced Freud's interpretation of what he heard and observed. At the end of his article on Femininity[5] Freud reminds us that his views are tentative, that they are based on observations of troubled women and that we need to learn much more about the matter. We have learned some more about the matter and there have been modifications of Freud's views.[6, 7, 8]

His assumption that females are castrated males and therefore must feel inferior was based on his view that the oedipus complex and castration anxiety were the central determinants of personality development. To compensate for the absence of a penis, he argued, the woman seeks one from a man. To accomplish this, she has to be passive toward him and submit to him.[9, 10] Thus Freud equated femininity with passivity, submissiveness and masochism and masculinity with activity and assertiveness. Freud was never satisfied with this formulation and pointed out its inadequacy and inaccuracy.[11] Freud's formulation of femininity suffered because he did not emphasize sufficiently the importance of pre-oedipal experience and sociological expectations. He noted these limitations[5] and advised future investigators to pay more attention to these matters. It is noteworthy that some of Freud's followers adhered rigidly to formulations which he offered with reservations.[12]

Recent studies have indicated the importance of early mothering to children of both sexes not only in the establishment of gender but as a basis for personality development.[13, 8, 14] In the role of mother, a woman is neither passive nor submissive. The care of children requires activity and assertiveness. The response to the activity of women which is both desired and feared is related to the ambivalence toward women noted above. Her activity is desired because without it life could not be sustained but it is also feared because it can be overwhelming and inhibit the development of the capacity for self-care. This dilemma persists throughout life and is manifested in conflicts between activity and passivity, independence and dependence which are encountered in both sexes. In the role of caretaker, the woman is faced with the challenge to meet the needs of those she loves and for whom she cares in a manner which will not deprive them of their autonomy and independence. This is accomplished not by passively submitting to their needs and demands, but by actively responding to them in a receptive fashion while at the same time asserting her own needs. Receptivity is not a characteristic only of women for men in their roles as father, executives, administrators, lover, etc. have to be aware of and appropriately responsive to the needs of others. In one activity only, i.e., sexual intercourse, is receptivity more characteristic of the female role than the male, but even in this role a degree of activity is essential.

The adult's view of women which includes the woman's view of herself develops gradually. It is based not only on the actual experiences with the persons who care for the child but the child's elaboration of phantasies around these experiences. Associated with adequate maternal care, the child develops a feeling of self-worth, while inadequate care can foster low self-esteem. Phantasies associated with these experiences are elaborated at a time when the ego is poorly developed and the responses to mothering tend to be unrealistic and extreme. To the child, the mother is all powerful. To be gratified by her is a blissful experience, while to be deprived a terrifying one. Thus arise the notions of mother as goddess or demon which I mentioned earlier. With the development of the ego and the capacity for reality testing the view of the mother is tempered but her magic is never totally dispelled. It is manifested by the close, albeit ambivalent, tie to the mother which persists throughout life.

At the same time as the child emerges from the close tie to the mother and becomes aware of itself as an independent person, psychological and biological development direct attention to the genital area. Sensations from the genitals become a focus around which phantasies develop. These phantasies will become incorporated into the child's view of its worth and its expectations from self and others. Because of the nature of the penis - its activity and visibility - it plays a major role in these phantasies. The pleasures which the boy derives from his penis and the anxiety he experiences and manifests when he is threatened by injury to it conveys its importance to the girl. She envies the boy's possession of so valuable an organ. The intensity of her envy will depend on whether or not she feels deprived in other ways and on the value placed on the one who possesses a penis. If she and her mother have been valued by her father, if her father does not demand deferential treatment and if the mother values herself, the lack of a penis will not be especially troublesome. If on the other hand, the possessor of a penis is accorded power and prestige, her envy will persist. Some degree of penis envy in girls is inevitable just as boys are inevitably concerned about the size of their penises. It is not merely the presence or absence of the penis which has an impact on psychic functioning but the phantasies associated with it - the meaning and value attributed to it which influences psychology.[15] The penis can be viewed as a magic symbol of power or it can be viewed as an organ which is a source of great pleasure which also serves excretory and reproductive functions. From clinical observations, we know that from an early age it is highly invested. The magic attributed to it is gradually modified but it always retains a certain magical quality. The degree of magic which she attributes to the penis will influence the value which a woman places on herself in relation to men and will reflect her thought and behavior in many ways. Anatomy is not destiny, but the attitudes associated with anatomy influence destiny.

The menarche is another very significant organizer of female psychology. Menses can be interpreted as evidence of damage or as a herald of growing independence and potential motherhood.[16] Menses are both feared and welcomed. They evoke awe and disgust. The psychic turmoil associated with the onset of menses is related to the maturational push toward independence and the severance of parental ties which occurs at this time. The girl's need to prematurely establish her independence may be manifested in ill-conceived aggressive and sexual behavior.

During adolescence the girl has the opportunity to consolidate her image of herself and her relationships to others and to integrate her sexual and non-sexual roles and her ambitions. In the past, a woman's role was defined largely in terms of home-making, reproductive functions and child care. Because of technological advances, this is no longer true. Childbearing can be controlled and is no longer the threat to life which it once was. Home-making is far less demanding and time consuming. Women are healthier, live longer and have more time to devote to a variety of activities than in the past.

As women have been freed to develop in many areas, questions of limitations and priorities arise. How different are her capabilities from men's? Should she restrict her activities? We do have some data about these issues.[17] The capabilities of men and women do differ but only in a few areas. Males are more aggressive and excel in visual-spatial tasks and in mathematics. Females have superior verbal abilities. These differences are statistical and there is considerable overlap. Some women are more aggressive than some men, and some men more verbal than some women, etc. There is no difference in overall intelligence. Differences between individual men and women are more significant than generalized differences. As women have accepted challenges in various fields, the diveristy of their abilities has been demonstrated. It is increasingly difficult to maintain that women are inferior. The superior status which has been accorded to men is based on their achievement which was attributed to their biology. In the past women did not have the opportunity to demonstrate their worth. As opportunities have been equalized and the accomplishments of women comparable to those of men, the importance of biology has receded.

Contemporary woman has many more choices than her predecessors had. She can choose a variety of occupations and whether or not to have children. With choices, conflicts arise. These conflicts are brought to us as psychiatrists and psychoanalysts. We cannot, of course, solve the conflicts for any patient, but we can help identify the issues and the stereotypes with which our women patients struggle. We know that some women see themselves as weaker and more helpless than they are and fear to assert themselves. We can clarify the misconceptions and phantasies about the significance of biological, anatomical and experiential factors on which stereotypes are based and the role of sociological factors in their maintenance. The stereotype that women should be passive and submissive is based largely on phantasies of what she is and expectations of what she should be. It expresses the fear that if she is active she might be destructive and unavailable for nurturance and sexual activity and the wish that she will fulfill the longing for blissful experiences. Men's anger and dissatisfaction with women is often related to the frustration of phantasied expectations. The failure to differentiate what is possible from what is phantasied and wished for is also a source of women's dissatisfaction with men.

As psychiatrists and psychoanalysts, we must eschew stereotypes. It is no more appropriate to urge a woman to pursue a career in line with so-called feminist aspirations than it is to persuade her to accept the "traditional role." Women cannot be characterized as passive, dependent, nurturant, intuitive and submissive to name a few of the so-called feminine characteristics nor men as active, independent, aggressive and logical. These characteristics are found in varying combinations in both men and women. All persons struggle with passive longings, wishes to care for others, desires for self assertion, the need to contain aggression and maintenancy of self-esteem. The similarities of the concerns of men and women are impressive. Because of differences in anatomy and biology and the actual and symbolic importance attributed to body organs and biological functions, the manifestations of the concerns and their resolution may differ in men and women. It is noteworthy that manifestations and resolutions of conflicts also differ among persons of the same sex. It is a challenge to and a responsibility of the therapist, whether male or female, to be alert to the variety of ways in which conflicts may arise and be manifested and to aid in a resolution which will suit the capacities and needs of the patient. We must be ever mindful of the tyranny of stereotypes and the psychic pain which has resulted from attempts of persons to fit themselves into molds of what they think they should be rather than to recognize and cultivate what they are and can be.

## REFERENCES

1. Roeske N" Women in psychiatry. Am J Psychiatry 133:365-372, 1976
2. Zeldow PB: Sex differences in psychiatric evaluation and treatment. Arch Gen Psychiatry 35:89-93, 1978
3. Abramowitz SI, Roback HB, Schwartz SM, et al: Sex bias in psychotherapy: A failure to confirm. Amer S. Psychiatry 133:706-709, 1976
4. Seiden AM: Overview: Research on psychology of women Parts I & II. Am J Psychiatry 133:995-1007 and 1111-1123, 1976
5. Freud S (1933) Femininity. Standard Edition 22:112-135, London, Hogarth Press, 1964.
6. Kleeman S: Freud's views of early female sexuality. J Amer Psychoanalytic Assoc 24 supplement:3-28, 1976
7. Galenson E, Roiphe H: Some suggested revisions concerning early female development. J Amer Psychoanalytic Assoc 24 supplement: 29-58, 1976
8. Shaller, RJ: Primary femininity. J Amer Psychoanalytic Assoc 24 supplement:59-78, 1976
9. Freud S (1925) Some Psychical Consequences of the Anatomical Distinction Between the Sexes. Standard Edition 19:243-258. London, Hogarth Press, 1961
10. Freud S (1931) Female Sexuality. Standard Edition 21:223-243. London, Hogarth Press, 1961.
11. Freud S (1924): The Economic Problem of Masochism. Standard Edition 19:157-170. London, Hogarth Press, 1961
12. Flugel Z: Feminine psychosexual development in Freudian theory: A historical reconstruction. Psychoanalytic Quart 42:385-408, 1973
13. Greenacre P (1958): Early Physical Determinants in Development of Sense of Identity in: Emotional Growth. N.Y. IUP 1971, 113-127
14. Mabler M: Symbosis and individuation - the psychological birth of the human infant. Psychoanalytic Study of the Child 29:89-106, 1974 New Haven Yale University Press
15. Grossman WI, Stewart WA: Penis envy: from childhood wish to developmental metaphor. J Am Psychoanalytic Assoc 24 Supplement: 193-212, 1976
16. Ritvo S: Adolescent to woman. J Am Psychoanalytic Assoc 24 Supplement: 127-138, 1976
17. Maccoby EE and Jacklin CN: Psychology of Sex Differences. Stanford University Press. Stanford, Calif. 1974

# A Leader in Psychiatry—Carol Nadelson, M.D.

CLAIR M. CALLAN, M.D.

A female physician, Carol Nadelson, has been elected to the position of Vice-President of the American Psychiatric Association. Although she is not the first woman to be elected to the position, Carol is the first female officer in the APA in recent years.

The woman's movement over the past ten years has constantly emphazied the need of women to get involved in leadership positions in organizations to which they belong. This has not happened to a very marked degree in medicine. There is a conspicuous lack of women in high offices in both organized medicine and in academia. Dr. Nadelson has some ideas as to the reason why and some suggestions on how to rectify the situation.

Carol Nadelson serves as an excellent role-model for women physicians. She is currently professor and vice-chairman of the department of Psychiatry at Tufts University School of Medicine in Boston, Mass. Prior to assuming this position she held a position on the faculty of Harvard for 18 years. For many years she has been a member of the American Medical Women's Association as well as the APA. She has been prominent in both organizations, as a lecturer, writer and an active participant at all levels. All of these activities have given her great visibility to the rest of her colleagues. "She is a physician who is willing to give her time and her talent to organized medicine," states Eugenia Marcus, M.D., President of Branch 39, AMWA in Boston. "Carol has always been very supportive in AMWA activities, and has given up several free Saturday mornings to attend organizational meetings where her expertise in organized medicine was invaluable." Carol Nadelson feels that this commitment to organized medicine is vitally important for all physicians, but especially for women physicians. One of her aims is to encourage more women to become active in organized medicine. "I believe that it is important for women to become involved in their local medical societies and specialty societies. Men should encourage their female colleagues to seek an active role. Medicine needs to be exposed to both the male and female point of view," she states emphatically. "In many instances it is advantageous to have the same views expressed in two different ways. Variety can only increase the growth of medicine, not stultify it."

There is an increasing number of women in medicine—both in practice and in medical school. Yet their impact and "clout" are minimal. Why? Carol Nadelson believes that this is largely because women physicians have chosen not to be involved outside of their practice. "They are still content to remain in the kitchen," she says. "I have tried to encourage them to write articles, or to speak at meetings, but they seem to be afraid to appear in public. They may be reluctant to expose themselves to situations where their work can be evaluated and critized." This alone is sufficient to keep women from being considered for leadership roles. By their own inaction they do not perform in ways that bring recognition, advancement and promotion. Dr. Nadelson hopes that this attitude is changing. She believes that women must step out of the shadows or "the kitchen" if they are to be taken seriously by the medical profession as a whole.

Some medical school classes now consist of 35% women students. However, there has not been a corresponding increase in the number of female faculty members. Female medical students need female faculty members to serve as role models. "Currently there is only one woman chairman of a department, and that is Paula Clayton who chairs the department of Psychiatry in Minnesota," said Dr. Nadelson. "I am the only female vice-chairman of a department." As she is vice-chairman of Psychiatry this may indicate that psychiatrists are more willing to integrate women in their organizational structure. In addition, Dr. Nadelson is also the director of training for the department of Psychiatry—a role she feels is extremely important for a woman, but again few women hold this position. Dr. Nadelson is proud of the fact that there are more women on the faculty of her department than elsewhere in the country. "I hope that the Association of American Medical Colleges will address this im-

---

CLAIR M. CALLAN, M.D., Associate Medical Director, Department of Income Maintenance, State of Connecticut, Hartford. Dr. Callan supervises all the medical aspects of the medicaid program including policy setting and prior authorizations.

portant issue" she says. "There are still no female deans and very few females in high academic positions. Both male and female students need to have input from instructors of both sexes."

The author of several articles and a book, Dr. Nadelson is currently working on a book with David Marcotte of Wisconsin. Tentatively titled "Clinical Issues of Human Sexuality" it is attempting to present issues on sexuality for psychiatrists and psychiatric residents who are involved in consultations with patients referred from other physicians who do not feel competent to tackle these issues. Although she knows of several women physicians who are well qualified in this field Dr. Nadelson is finding it very difficult to get them to commit themselves on paper. "I have had to twist their arms to get them to write part of a chapter," she says, ruefully. "They still need to develop courage to commit themselves in writing to their views."

Carol Nadelson has effectively juggled two careers. As many women physicians are aware, family responsibilities can interfere drastically with the pursuit of a medical career. She is married to Theodore Nadelson, M.D., Chief of Psychiatry, Boston V.A. Hospital, and clinical professor of Psychiatry at Tufts University School of Medicine. They are the parents of two teenagers—a 15 year-old son and a 13 year-old daughter. Both Doctors Nadelson are considered a team in medicine—appearing together as speakers on many panels, and this team work is very evident in their family life. "In a dual career family," Carol says "Both parents have to participate very actively in the running of the family. You must be both reasonable and realistic about your responsibilities. Both of you should be willing to get help when this is needed—no matter what type of help it is." A important asset, she feels, is to be flexible when the situation warrants it. Both she and her husband have included their children on business trips whenever possible. As a result the children have been exposed to many different cultures and experiences which have broadened their outlook on life.

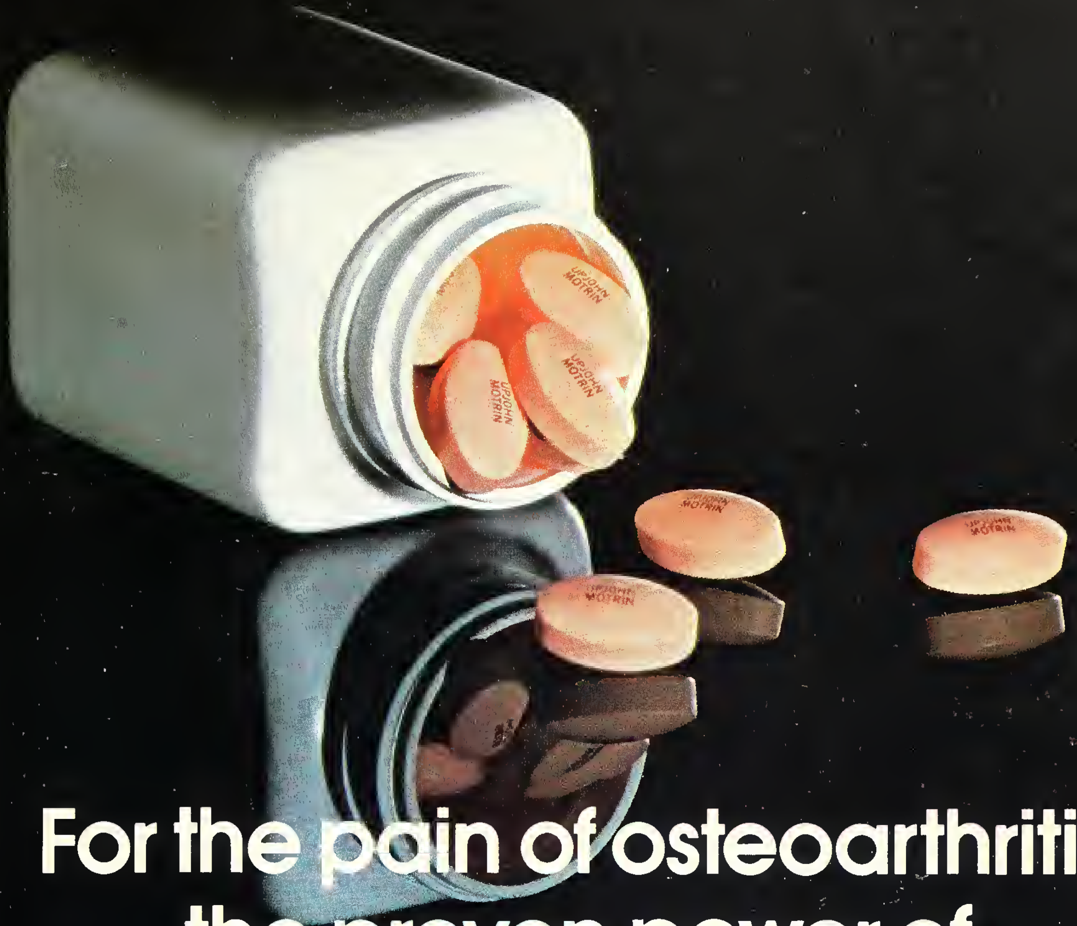
Carol has always practiced medicine, even when her children were small. She did work part time for a few years, but then she realized that she was working as hard as if she was working full time. So she switched to full time. She has always been involved in academic medicine and while at Harvard ran the student teaching program for the department of Psychiatry. At the present time she does clinical work at Tufts in addition to her academic responsibilities, and also spends fifteen hours a week in private practice. She spends a lot of time travelling as she is much in demand as a speaker. With her election as vice-president of the APA she will be spending a lot of time in Washington for policy and other meetings.

Five years ago Carol Nadelson became the first female president of the Massachusetts Psychiatric Society, after spending many years in several other offices. Since that time the Massachusetts Psychiatric Society has had two more women presidents, a fact that pleases Dr. Nadelson greatly.

As newly elected vice-president of the American Psychiatric Society Dr. Nadelson has some aims which she hopes to achieve over the next few years. High on her priorty list is to work towards getting the membership of the APA to work together again. She believes that the situation that developed last year within the APA over the ERA issue (when the Board of Trustees changed the annual meeting site under pressure from ERA supporters and then reversed themselves under threat of a lawsuit by the city of New Orleans) indicates that in some ways the members are beginning to look beyond narrow political issues. She hopes that women psychiatrists can continue the momentum they started a while ago, and by doing so will continue to involve more women actively in organized medicine. She believes that the APA should expand its thinking with regard to women physicians and also with regard to psychiatry. The APA should become more committed to building a strong image of psychiatry as a medical specialty. It should cease to view itself in a defensively and should become a more active participant and more positive force in the medical world.

Dr. Nadelson would like to see the general public become more aware of the issues of mental illness. Few people are aware of the extent of the problem. "The APA can take a leadership role in educating the general public, but this will take commitment from its members. I hope to help motivate them in this." she said.

What have women in medicine to look forward to? Carol Nadelson firmly believes that the future can only be brighter—if they are prepared to work at it. "Nothing will be handed to them on a silver platter," she said, "But for all of our sakes I hope that every woman physician will make a commitment to get involved in organized medicine. Many people sharing the burden will make the task easier for us all." Are woman physicians willing to accept this challenge? Time alone will tell.



For the pain of osteoarthritis
the proven power of

**Motrin®**
ibuprofen, Upjohn
**600 mg Tablets**
One tablet t.i.d.

Please see the following page for a brief summary of prescribing information.

**Upjohn**

81 The Upjohn Company

The Upjohn Company • Kalamazoo, Michigan 49001 USA

**Motrin® Tablets (ibuprofen, Upjohn)**

**Contraindications:** Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema, and bronchospastic reactivity to aspirin, iodides, or other non-steroidal anti-inflammatory agents. Anaphylactoid reactions have occurred in such patients.

**Warnings:** Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. *Motrin* should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If *Motrin* must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity characterized by papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with *Motrin*.

**Precautions: Blurred and/or diminished vision**, scotomata, and/or changes in color vision have been reported. If these develop, discontinue *Motrin* and the patient should have an ophthalmologic examination, including central visual fields and color vision testing. **Fluid retention and edema** have been associated with *Motrin;* use with caution in patients with a history of cardiac decompensation or hypertension. *Motrin* is excreted mainly by the kidneys. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of *Motrin* safety in patients with chronic renal failure have not been done. *Motrin* can inhibit **platelet aggregation** and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy. Patients should report signs or symptoms of **gastrointestinal ulceration** or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema. To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged **corticosteroid therapy** should have therapy tapered slowly when *Motrin* is added. The antipyretic, anti-inflammatory activity of *Motrin* may mask inflammation and fever.

**Drug interactions.** *Aspirin:* used concomitantly may decrease *Motrin* blood levels. *Coumarin:* bleeding has been reported in patients taking *Motrin* and coumarin.

**Pregnancy and nursing mothers:** *Motrin* should not be taken during pregnancy nor by nursing mothers.

**Adverse Reactions**

The most frequent type of adverse reaction occurring with *Motrin* is gastrointestinal, of which one or more occurred in 4% to 16% of the patients.

***Incidence Greater Than 1% (but less than 3%)—Probable Causal Relationship***

**Gastrointestinal:** Nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,* headache, nervousness; **Dermatologic:** Rash* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

***Incidence Less Than 1%—Probable Causal Relationship*****

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma; **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia; **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit; **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasm (see CONTRAINDICATIONS); **Renal:** Acute renal failure in patients with preexisting, significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria; **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

***Incidence Less Than 1%—Causal Relationship Unknown*****

**Gastrointestinal:** Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmia (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis; **Renal:** Renal papillary necrosis.

*Reactions occurring in 3% to 9% of patients treated with *Motrin*. (Those reactions occurring in less than 3% of the patients are unmarked.)

**Reactions are classified under *"Probable Causal Relationship" (PCR)* if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under *"Causal Relationship Unknown"* if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

**Dosage and Administration:** Do not exceed 2400 mg per day. If gastrointestinal complaints occur, administer with meals or milk.

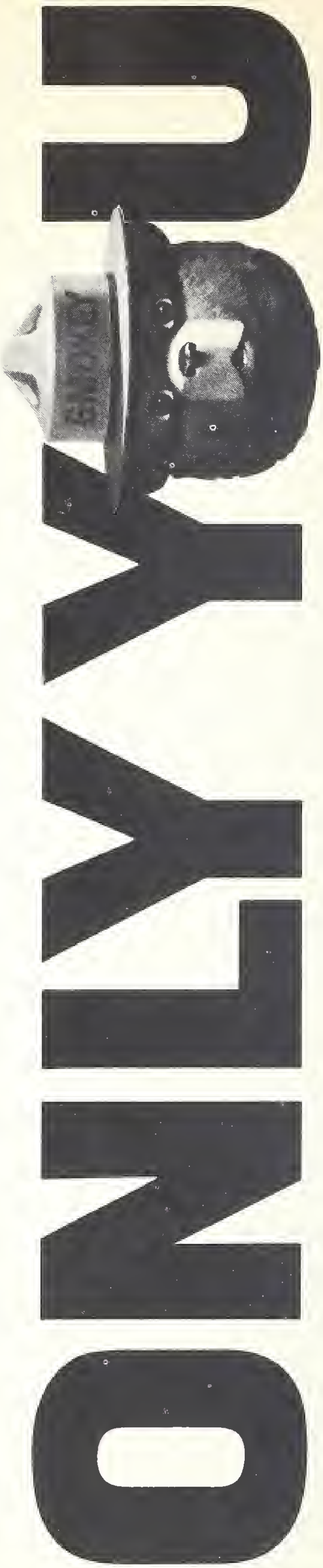
Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

**Caution:** Federal law prohibits dispensing without prescription.

MED B-5-S

**Upjohn** THE UPJOHN COMPANY
Kalamazoo, Michigan 49001 USA

J-9042-4 July 1981



Ad Council A Public Service of This Magazine
& The Advertising Council

# The American Medical Women's Association and Today's Practicing Woman Physician

VIVIAN HARLIN, M.D.

The American Medical Women's Association (AMWA) is the only national professional organization which is dedicated to the promotion of causes of women physicians and medical students. The officers and membership of AMWA wants Connecticut women in medical practice, women house officers, medical students, and inactive women physicians to know of its activities, goals, projects and plans for the future.

The organization was founded in Chicago in 1915, as the Medical Women's National Association, with a well-known pioneer woman physician, Dr. Bertha Van Hoosen, as its first president. In 1937 the name was changed to the American Medical Women's Association. Headquarters are in New York City. Forty-two branches are located throughout the United States, including Branch 7, Central Connecticut. Individuals in geographic locations where a branch has not yet been established may join as members-at-large. Where eight or more active AMWA physicians can come together for meetings, new branches may be chartered. Active members of AMWA automatically hold membership in the Medical Women's International Association which represents forty affiliated countries. Student memberships are available to women enrollees of accredited medical schools in the United States.

Membership in the American Medical Women's Association provides a mechanism for communication, aid, and support for the woman physician. Through the organization's annual meetings, committee structure, newsletter, and professional journal, it represents a vehicle for networking for women who have chosen to work in the challenging field of medicine. Meeting sites for the annual convention are chosen in cities from the eastern seaboard to the Pacific in order to encourage active participation of physicians from across the entire U.S. Category 1 CME credits are available for the scientific portion of the program. Friends of the American Medical Women's Association (FAMWA) is an auxiliary group whose major purpose is to encourage the assistance of others in support of the objectives of the association. Invitation of family members and friends to membership in FAMWA and to accompany active members to convention makes for a happy combination of work and pleasure.

Participation in the activities of the American Medical Women's Association can mean involvement in "making changes happen" for women in medicine, as expressed by Dr. Eva Schindler-Rainman, who is a faculty member and workshop consultant with the American Medical Women's Association "Women in Medical Academia" project.[1] The "Women in Medical Academia" project and AMWA serve as sources of information and statistics on women in full and part-time medical practice; on women in the specialties; on re-entry of women to medical practice after a hiatus for childbirth and child rearing; on admission of women to medical schools; and on women and faculty tenure salaries and positions; hospital staff appointments; and other professional concerns such as important committee appointments.

The AMWA does not compete with other professional organizations, but rather this unique association complements membership in the others, offering to its constituents the opportunity to learn about and to share some of the special problems of women, and to provide mutual help and understanding. Committees of the association reflect the interests and activities of the membership. In addition to an organization's usual standing committees, the AMWA's special interests are reflected in the following committees; International Relations, Legislative, Medical Education and Research Fund, Medical Opportunities and Practice, Student Loans, Fellowships and Grants, and Publications. Intensive work by the Publications Committee the past year, including the hiring of a journalist-consultant, has resulted in the presentation of specific recommendations to the Executive Board for changes in future monthly editions of the Journal. It is essential

---

VIVIAN HARLIN, M.D., President American Medical Women's Association; Superintendent of Public Instruction, School Health Service, Washington State.

that the *Journal of the American Medical Women's Association* (JAMWA) provide a unique forum for the professional, scholarly, and scientific concerns of women physicians.[2] The Journal will have a new look this year. Its primary function will be to communicate ideas that pertain to women in their roles as physicians and as women interacting with society as a whole. New departments are planned, such as news of women in medicine, medical education news, and a legislative update. The "new Journal" is the response of the Publication Committee, the Board, and the Editor from the membership of AMWA which indicated that it wants a publication that deals with the "role of female physicians, their problems in practice," provides a "forum for women in medicine," and presents "a professional journal that focuses on women in medicine."[3]

One of the principal goals of the AMWA is to encourage and aid qualified women to pursue a medical career. One way of accomplishing this goal is through the Student Loan Fund which was established in 1938. All available funds are utilized each year, with an excellent repayment record. The Committee does an outstanding job of evaluating the requests and dispensing the loans, the funding coming from gifts, memorials, and bequests.

The Medical Education and Research Fund Committee is studying the possibility of publishing a book for the public on the professional lives of women physicians a well as rewriting the outdated AMWA booklet, "Medicine—A Woman's Career" which has motivated many young women in their career plans, towards the pursuit of a degree as Doctor of Medicine. The Committee is also looking at ways in which it can become involved in improved teaching of medical students in the area of women's health.

An AMWA Constitutional Convention, called to session in Hartford Connecticut in January 1981 drew a significant number of active members and students representing several branches for the purpose of reviewing the existing Constitution and By-Laws so that changes might be recommended to the Constitution and By-Laws Committee. The membership was concerned that today's AMWA must reflect relevance to the needs of today's women physicians. It was a good meeting with a lot of serious discussion and real dedication to task on the part of each and every participant. Proposed changes and additions have been referred to the Constitution and By-Laws Committee. Recommendations will be published in the September issue of the Journal and voted on at the next annual convention November 3-9, 1981, at the Bonaventure Hotel in Los Angeles.

The American Medical Women's Association has a special meaning because women physicians have special concerns, problems and needs. Medicine is a demanding profession. Many practicing women physicians not only must meet the requirements of their chosen profession, but must also blend family responsibilities with their busy schedules as doctors. The opportunity to share information with fellow members of the American Medical Women's Association through the national conventions, branch meetings, and publications can go a long way toward providing women physicians throughout the United States with beneficial mutual support, understanding, friendship new insight, and growth.

REFERENCES

1. Scadron, A.: Making Change Happen: Women Doctors on the Move, Women in Medical Academia 2:1, 1979.
2. Leaning, D.: Report to the Publications Committee of the American Medical Women's Association, 1980.
3. ibid.

# Women Physicians in Connecticut: A Survey

## CLAIR M. CALLAN M.D. AND EVE KLIPSTEIN M.D.

In 1980, 6,700 physicians were licensed to practice medicine in the State of Connecticut. Of this number, 475 or seven per cent were women. This number seems to be very small when compared with the trend of increasing numbers of women being enrolled in medical schools. A survey was conducted to see where these women physicians were; if they were in active practice or working fulltime or involved with teaching medical students. Questionnaires were mailed out to the physicians listed in the book published by the Department of Health for the State of Connecticut. A total of 44.2% responded by the cut-off date. Only one mailing was sent out; the response may have been greater if a second mailing had been distributed.

---

CLAIR M. CALLAN, M.D. is the current president of Branch No. 7, American Medical Women's Association. Dr. Callan is also Associate Medical Director, Department of Income Maintenance, State of Connecticut, Hartford.

EVE KLIPSTEIN, M.D. is the vice-president of Branch No. 7, American Medical Women's Association. At the time this paper was written she was in private practice in Manchester, CT., specializing in pediatrics.

In addition to the factual answers to the questionnaire, several physicians wrote lengthy responses to the questions concerning their family life and medical career. Some of these responses gave a fascinating insight into the problems that women have had to contend with as they struggle to establish themselves in a male-dominated profession. We were able to draw a picture of the typical woman physician licensed to practice medicine in Connecticut. She is under forty years old (36%) and graduated from medical school in the United States (74%). She is a board-certified pediatrician (18.8%) who works full-time (67%), having a hospital staff position (51%) as well as an individual practice. She is involved with teaching (48.4%) both in the hospital and medical school. She is married to a physician (76.5%) and her two children are under twelve. Family responsibilities do interfere with her career—largely because she is responsible for family management and finds it difficult to find competent household help.

One surprising statistic is that in forty per cent of the responses the physician has changed her career direction, mostly after obtaining her M.D. degree. She belongs to at least one specialty organization (55.5%) and serves on a committee. Most of these committees are within hospitals, as the total number of women on committees of local medical societies is small. She feels positive towards other women physicians and feels that she in turn receives support from them. The government should not be involved in medical care, according to forty-four per cent of the respondents.

The age of the physicians answering the survey ranged from 29 to 99, with 36 per cent under 40. As might be expected, the largest number (74%) graduated from an American medical school. Post-graduate training was taken by the majority, although some indicated that this was limited, or not possible because of family responsibilities.

A total of 23 specialities was represented in the responses. The three most popular specialities were pediatrics (18.75%), psychiatry and internal medicine (15.6% each). Ob-Gyn, family practice and anesthesiology were equally represented as the next most popular speciality. There were 58 per cent who were board certified, some in more than one speciality.

Eighty-six per cent indicated that they are currently working. Connecticut's $160 license fee may discourage physicians who are not able to work from maintaining their licences. Eighty-one per cent are working full-time and 19 per cent part-time.

Of the 51 per cent who indicated that they had a hospital staff position, 49 per cent were full-time. Yale Medical Center had the highest per cent among hospitals with twenty-six. St. Francis Hospital and John Dempsey Hospital had five per cent each. In all, 39 institutions are represented in the response, including state hospitals and mental health centers. Of the 36 general hospitals in the state, 27 are represented in the response.

Although Connecticut has a physician population of which only seven per cent are women, a large percentage of them do indicate that they are involved with teaching. Forty-eight per cent hold a teaching position. Here again, Yale is predominantly represented with 50 per cent of the total holding teaching positions at Yale. The University of Connecticut has 20 per cent, and 39 per cent are involved with teaching in the hospital setting. The medical schools are approaching classes of which 30 per cent are women. These figures indicate that in Connecticut female medical students are being exposed to female role-models during their medical school careers. There are four full professors, three clinical professors, two department chairwomen and 37 assistant or associate professors who are female.

Forty-seven per cent are in private practice. Of these, 64 per cent are in solo practice and 36 per cent are in group practice. Most of these groups are unispecialty with both male and female physicians.

Most of the women physicians feel that they get as many referrals as their male counterparts; some indicate that they believe that they receive more. Ten per cent feel that they do not get as many referrals and four per cent have been told that they do not get referrals because they do not need the money. The implication is that their husbands can support them. This last figure was evenly distributed between older and younger physicians. Referrals come from both male and female colleagues and from patients themselves.

The patient population of the women physicians is predominantly female, although 17 per cent indicated that their practice is mostly male. Several physicians commented that the number of male patients in their practice is increasing and that their patients in general react very positively to them. Some patients are relieved to find that the doctor is a woman.

Sixty-six per cent of the respondents are married, 19 per cent single, ten per cent divorced and five per cent widowed. Sixty-five per cent have children, the average family size being two. The ages of the children are fairly evenly divided; 48 per cent are under two, 39 per cent teenagers, and 46 per cent over twenty. Most children feel positively towards their mother's career; twenty-four per cent have ambivalent feelings, and only four per cent are negative.

On the whole, most women feel that their families are supportive of their medical careers; however, seven per cent felt strongly enough to say that they did not receive support. Of these, one indicated that her physician-mother was non-supportive (both parents are M.D.s) and six indicated that their physician-husbands were non-supportive.

Forty-six per cent feel that family responsibilities interfere to some extent with their careers, or have in the past. Many also feel that the reverse is true. Although 27 per cent indicated that they did not feel that family responsibilities interfered, several had lost time from medicine because of child care responsibilities. The amount of time lost varied from a few months to 20 years, with those working part-time indicating that they are losing a percentage of their work-day because of their families.

Seventy-eight per cent are married to physicians, but only 19 per cent of these work together; 14 per cent come from families where either the parents or siblings are physicians and only two have mothers who are physicians. Most feel that their career decision has been influenced by these family members—one negatively. Some women indicated that other relatives such as uncles or close friends had influenced their decision to become a physician.

A large number (44%) have changed their career direction at some point. For some, this meant becoming a physician after they were already established in another career. However, for most, the changes were necessitated because of difficulties with managing both families and careers. Regular hours were cited as an important reason for the change, at least while the children were young.

More women physicians in the study belong to organized medicine than do not. Most belong to at least one specialty society. Local medical societies are favored over the Connecticut State Medical Society or the AMA. The state medical society fares better tha the AMA, with 66 members compared to forty-fou The American Medical Women's Association had 1 members; however, the total number of AMWA members in the state is fifty-six. Either the members did no respond to the survey or they did not include AMW among their professional organizations. Thirty-thre per cent hold committee appointments and 39 per cen of these chair the committee.

The women practicing medicine in Connecticut fee that in general they are more caring of their patients an that they take more time with them than male physicians do. Some attribute this to the fact that there is no quite so much financial pressure on them. They regar their income as the "second" salary and therefore fee that they have the luxury of taking time with patients There are some, however, who still feel the pressure o trying to prove themselves in a predominantly mal world.

In summary, although the women physicians i Connecticut are few in number, they are very active o the medical scene. While it is not always easy, they ar successfully juggling the dual roles of physician an homemaker. They are encouraged by, and welcome the increasing number of female medical students. They feel that these increasing numbers of women i medicine will make it easier for women to take a mor prominent role.

# Changing Teenage Eating Behavior

## BARBARA EDELSTEIN, M.D.

John Evans, in "Emotional Changes of Puberty and Adolescence," has said, if you visit Egypt for a month you can write a book. If you stay for three months you may write an article, but if you stay longer you will find you know nothing. A similar awareness develops in the treatment of adolescent obesity, for here one is left with the certain knowledge that the more one knows, the less one understands.

Obesity in adolescence is emerging as an important challenge to pediatricians and family doctors. Its consequences are complex, and the serious effects may show only in adult life in an increased morbidity and perhaps mortality rate. For too long there has been failure to recognize the relation of fat in childhood to the problems of the overweight adult. Degenerative vascular disease, diabetes, job problems, and insurance premiums seem far removed from the overweight teenager. And as practitioners, we have tended to play down the immediate problems of body image and depression as being merely another aspect of adolescent behavior—unrelated to the severity of the situation.

My experience in this field has not evolved along the traditional route of pediatrics and psychiatry, but rather as a diet doctor exposed to the practicality of

---

BARBARA EDELSTEIN, M.D., specializes in nutrition and weight control, Bloomfield, CT.

achieving results without really answering the question "Why?"

I think we all realize what a frustrating and difficult problem it is to treat adult obesity. In fact, it is so difficult in terms of positive rewards that most physicians have decided not to treat it. And who can blame them? Dealing with a group of people who are not considered by the medical community as sick, and then trying to make them do something they don't want to do—which is diet—is not only ineffective, but frustrating and even more important to the medical ego, humiliating. A physician is used to setting up in a patient/doctor relationship a situation where he/she treats and the patient gets better. This traditional model is absent when one treats the overweight. You can give pills, psychotherapy, time, support, encouragement, and your left arm if you don't need it, and often the patient not only doesn't get better, but gets worse. Still more often the patient temporarily gets better, giving one a false sense of security, and then slips back into a higher weight state than before. This, as we all know, is the "recidivism" of the obese. Eighty to ninety percent of all obese adults who lose weight regain it within two years, no matter what treatment methods are employed. (The behaviorists will vehemently deny this.)

These depressing statistics have made it necessary to view the overweight teen as a possible starting point for a more successful outcome in the treatment of obesity. I obviously had missed the importance of educating this group correctly. In the past year I have seen at least a dozen former teenage patients returning to my office as young adults—15 to 40 pounds heavier. When they had finished their original diet I had considered them "cures." Obviously, neither the doctor nor the patient understood that obesity is a chronic disease which, if left untreated, keeps progressing, and at this time can only be controlled.

With this in mind I began questioning my severely overweight adult patients more closely. Were you heavy as a teenager? About 80% responded yes. Did your parents do anything about it? Surprisingly, 65% responded yes. *What did they do*? The answers included, "They took me to doctors who gave me appetite pills," "They told me I had an underactive thyroid" (many were still on thyroid), "They gave me a diet sheet," "They told me to eat less" (less 'what' was a mystery), and "They said it was baby fat and it would go away." One pediatrician even patted the girl's behind and said reassuringly to her mother, "Don't worry, she'll slim down when she meets a boy." The problem was that when she met the boy she weighed 170 pounds.

Therefore, the problem of obesity in adolescence had not always been ignored, but rather mistreated or not treated. The hoped for magical effect of diet and thyroid pills had led these patients as teenagers to believe that there was an easy way to lose weight, therefore there was no reason for them to understand their problem nor to change their behavior to correct it. In addition, many physicians failed to realize that certain teen rituals of eating are very much a part of the growing up experience, and, if a diet sheet does not in some way make allowances for these conditions, there will be no compliance.

Teenagers are not small adults or large children. They are a separate population group governed by their own logic and rules. To ignore this fact, in a diet situation (or any situation), dooms any sort of treatment plan. However, I was most surprised at the statement, "It's just baby fat." Although all of us are aware there is a certain amount of prepubertal fat stored for growth, most physicians know when this exceeds normal limits. There is no doubt there is a difference between a 12-year-old male with tall parents who begins getting fatter at puberty and a 12-year-old female with shorter parents who puts on weight. We can be fairly sure that the male who has not started his growth spurt will use up the excess body fat within the next few years. However, we cannot be that sure with the female. If she has started her menstrual period it is unlikely that she will grow much more. In addition, at adolescence females tend to pick up the extra layer of fat that marks the onset of their reproductive years.

Logically then, teaching teens about dieting seems like the right time. They are starting on the road to growing up—they are beginning a process of decision making; they are in a stage of optimism and belief that they have the resources and energy to succeed. Teenagers respond more to true hunger, and therefore are less likely to pick between meals or after supper. They stop eating when they are full, unlike their overweight adult counterpart. Their signals are not mixed up *yet*. Although they often have voracious appetites, they are willing to be filled up on nutritious food, as long as they like it—and don't have to prepare it for themselves. Therefore, motivation by *both* parent and child is important at this age. Because they are growing, their diet can also be more generous in calories and carbohydrates. Although they are suggestible, and seem to lack the ability to wait for long term goals, if taught basic nutrition in a positive non-moralistic way, they respond well. The selling point is pitched to improve their bodies—the girls for cosmetic reasons and the boys for physical strength, although lately we have been seeing more concern about health manifested by a rise in vegetarianism and interest in natural foods.

Adolescence has its problems in dieting. Peer pressure is often strong for the group to dress alike, think alike, and eat alike. Teens can be stubborn, tunnel visioned, and often resentful towards any adult authority figure. They usually believe in magical cures and will buy anything that promises easy, effortless weight loss. (This adolescent aspect of behavior is present in almost all obese adults.) And, finally, the overweight teenager may often move less than her normal counterpart. At best their activity level is unpredictable and sporadic. Overweight girls especially will make any excuses to avoid a regular exercise program. We used to think that this was because they were ashamed to be seen in shorts, but this is no longer thought to be true. Even if left to an individualized and solitary program, they tend to do less, and at a slower pace.

My criteria for obesity in this age group is: if a person looks fat, then he is fat. And the question is not "to treat or not to treat?", but "how to treat?" As well as inducing controlled loss of weight, the aim of treatment is to condition adolescent eating habits for the future.

I used to use an informal non-directive approach to teenage dieting. The teenager would come in with a parent: we would weigh them, give them a short physical, and talk generally about nutrition, good food, and "bad" food. I would then see them every four to six weeks, reweigh them, and see if they were losing weight. Especially with the younger adolescents, I was often quite happy if we kept their weight the same. Although I was saving the teenager and myself a lot of stress, I wasn't seeing much progress in the area of weight loss. I accidentally found out after talking to a group of teens who had been indoctrinated by Weight Watchers that they responded well to the ritual of a specific diet and regular weigh-ins. They also responded well to constant and positive reinforcement of sound diet principles. Therefore, I devised a more specific program, that has helped me in the treatment of adolescent obesity and has been helpful to patients to lose weight more successfully.

I. Define the type of obesity.
   A. *Environment*
      Hypertrophic (too much food, fat cells enlarged)
   B. *Hereditary*
      Hyperplastic (too many fat cells)—this presents a much more difficult problem.
   C. *Emotional*
      Morbid obesity
   D. *Metabolic*
      Aberrations of thyroid, adrenal, pituitary (rarely found—constantly sought)

II. Discuss with the teenagers the reality of *their specific* problem. Obesity is eating too much for *you* or exercising too little for *you*. It is a progressive *disease.* Some people produce too much fat and can't eat like the other people. You're O.K. but your body isn't. Dieting is a trade-off between food you like and the desire to be as thin as you can comfortably be.

III. Talk about nutrition as it relates to the teenager. What is a fat cell? What does it do? Seventy per cent of teens don't know that fat is stored energy, excess calories the body doesn't need. Talk about calories, carbohydrates, cholesterol, salt, health foods, additives, as they relate to general health and teenage health.

IV. Explain that you are there to give advice, help, and support, but *they* must do the work. Explain that dieting is just another form of growing up—a form of self discipline, a commitment. Anything you want requires work.

V. Understand the psychology of the age you are working with. Ericson said identity can be based on solidarity of a group's ideals—conscious awareness of one's uniqueness—a change in relationship and separation from the parents. It's too easy for the doctor to become the parent.

VI. Discuss old eating habits that have caused problems—too many sweets, eating between meals, late night eating (not common in teenagers).

VII. If possible, talk in front of a parent. This is not a privileged communication session. This is a learning situation for both parent and teenager. Teens have a knack for misinterpreting what you say, or becoming overly sensitive when you are honest with them. Often alarmed parents will call and ask what you said to the teenager that made her so upset. Also, having a parent present cuts down on the conflict about what one should eat in a diet, e.c., "Did your doctor say you could eat that?" Teenager (getting angry), "Of course she did!" Mother (suspicious), "O.K." When a parent is present, both patient and parent know exactly what is required. There is no need to question, and no hostile exchange takes place.

VIII. Choose the right diet. There are many diet plans that appeal to teenagers. *Don't* choose a plan that they don't want, because they won't follow it. Give them enough choices so that you can get an idea of where "they are," then plug into their feelings. Some teens don't want a formal written diet, so you give them an "undiet."

1. Cutting down.
   This is the most favorite undiet. Have them mentally divide their food into thirds, and eat one-third less of everything.
2. Three meals a day.
   This means no in-between eating, but eating the amount and type of food they want at meals. Surprisingly, this works quite well with teens that have a mild weight problem.
3. *No junk food.*
   This means in-between snacking O.K. but all convenience foods are out. Youngsters will snack on apples, nuts, raisins, and continue eating regular meals. This might be quite healthy, but doesn't usually result in weight loss for females.
4. Increase exercise.
   Some youngsters don't want to diet at all, but are willing to increase their exercise. In mild overweight this is effective as long as intake is not increased. Again it is a much more

successful way for boys to lose weight.

There are teens who do respond to a formal diet program. These can be selected by the physicians preference.

A. Calorie Diets. Still by far the most popular diet. These are basically balanced but reduced in calories. Normal intake for teenage girls is about 2,300 calories and boys, 3,300. These should be reduced 500 to 1,000 calories per day for significant weight loss.

B. High Protein-Low Carbohydrate Diets, such as Atkins, Stillman, and Scarsdale have been popular in the past few years. Generally, we don't like these diets because we believe teens should have an eating plan they can follow through life. Also, changing from this type of diet to traditional balanced diets often results in weight gain.

C. Portion Control. Some of the major diet plans frown on the use of calories or carbohydrates as a basis for weight reduction and have used portion control with some success. I find this helpful if you define "normal portion," because what is normal for one patient is not normal for another. We define portion by using weight or measure of food. For instance, 4 oz. of meat and 1 cup of vegetable are defined as a normal portion. The patient soon learns this visually and can discontinue the use of the scale and the cup.

Teens like the informality of the latter two programs, rather than the rigidity of calorie-counting.

Once a diet is assigned, ask for food records, and records of feelings associated with food intake or refusal of food. These give good clues for future handling of the case.

Many teenagers go on a diet and have no idea why they are losing weight. Some thing it is some particular combination of foods that is responsible, others think it is the times they eat. Make sure they understand they are losing weight because total calories are being reduced; feedings are balanced (no 1-meal-per-day) while the necessary nutritional requirements are being met.

IX. Discuss alternatives that are appropriate for teen life style. There are many realities that must be faced when planning a diet for this age group. Work them out as you discuss the diet.

1. School schedule
2. Work schedule
3. Food likes and dislikes
4. Fast food consumption
5. Financial status
6. Family cooperation

X. Explain the realities of weight loss. Many are disappointed by *normal* rate of loss. Most teens believe that pounds will fall off when they start to diet.

1. Speed of weight loss: how much can you expect to lose in a given period of time.
2. The unpredictability of weight loss: it is not always logical when, in a period of time, you will lose weight.
3. The food intake: how much food must you eat to lose two pounds per week, one pound per week.
4. The inaccuracy of the calorie when applied to human metabolism.
5. The inaccuracy of the calorie when applied to energy expenditure.

XI. Learn to *anticipate* diet problems. Most teenagers act as if everything will conveniently work into their diet, so they won't plan ahead. Diet is not spontaneous. It is a contrived state, and as such it must be planned in advance. Analyze the situation. Talk about making choices in food. Teach them to choose the least caloric, and offer some solutions. Talk about tough spots in dieting:

1. After-school appetite
2. On-the-job temptations
3. Binging
4. Parties
5. Big dates
6. Baby sitting
7. Movies

Have teens do some problem-solving. How would *you* eat:

1. On Thanksgiving?
2. When you visit your grandmother?
3. On a big date?

XII. Warn teens about problem areas.

1. The plateau—time when on the same diet weight loss stops. Wait it out.
2. The small weight loss girls have the week before a menstrual period.
3. Taking B.C. pills, antibiotics, steroids, will slow weight loss down.

Be realistic and flexible but insist on *regular* visits and weigh-ins.

XIII. Encourage broadening of good choices but learn to work within the choices you have. I've dieted teens on hamburgers, string beans, apples, and skim milk. Variety will come later.

XIV. Anticipate short cuts. A teenager will test limits. Make sure nutritional intake is adequate. Girls, particularly, will skip meals.

XV. Deal with physical problems as they arise. You might even warn teenagers that certain side effects are natural but you want to know about them.

1. Fatigue—sometimes emotional, often due to rapid initial weight loss and resulting in sodium and potassium depletion.

2. Gas—mostly air swallowing, or due to increased consumption of gassy vegetables.
3. Constipation—low carbohydrate intake makes stool smaller and bowel drier. Add unprocessed bran if a problem.
4. Food allergies—sometimes eating the same food will lead to previously unsuspected allergies.

XVI. Try to motivate your patient to stay on a diet.

1. Teach self-motivation. Look in mirror or at photo of fat self.
2. Delay the grab reflex—relax and think before you eat.
3. Give yourself a reward for each 5 or 10 pounds.
4. Avoid self-pity—"Things could be worse" approach.

XVII. Start challenging excuses. Stop the mood-food reflex, so common in adults. Confront common cop-outs:

1. I was sick so I ate.
2. I was meant to be fat.
3. Dieting is boring.
4. Do diet food at school.

XVIII. Separate the battle lines between parent and teenager. Do not side-merely point out roles. One provides and gives support. The other follows the rules. Don't get caught in this conflict.

XIX. Encourage, plead, and push teens to exercise. Emphasize what exercise does. It's not just the burning of calories. Aerobic exercise is extremely important in this age group. They must be taught to move just as they are taught to eat. Exercise increases basal metabolic rate, decreases appetite, encourages the burning of fat instead of muscle and, in the age group, might limit fat cell multiplication.

XX. Discuss maintenance—the diet after the diet. Previously overweight teens will rarely be able to eat like thin teens. Return *slowly* to *normal* eating—not *former* eating.

XXI. Teach good rules of maintenance.

1. Teach teens to be more assertive about food intake.
2. Plan ahead and make sure low calorie food is available.
3. Think fat! If you think thin you get too confident and start eating like a thin person.
4. Keep exercising.
5. Remember the habits that made you fat.
6. Get in touch with your feelings about food, hunger, taste. Always ask, "Am I really hungry?"
7. Make calories count: an orange is better than orange juice because it's more filling and requires more chewing.
8. Dilute and substitute: lo-cal margarine for regular margarine.
9. Don't believe in food myths: no food dissolves fat.
10. Learn to communicate—instead of eating your problems away.
11. Make friends with the scale: get weighed daily, at the same time and on the same scale. A gain of more than two pounds in a female should send you back on a weight reduction diet for a few days.
12. *You* learn to prepare good low calorie foods if you are bored with your diet.
13. Learn to cope with your new body: no unreasonable expectations. Thin doesn't solve everything.

XXII. Finally, if the teenager doesn't lose all the weight she wants, encourage her to live within her own limitations, and emphasize that she can be a successful human being without being thin, and that when it comes to dieting there are always new chances.

Sometimes, however, after all this elaborate protocol to help teenagers lose weight, one is faced with the cold, hard fact of the teen psyche. They'll do it when they want to, and often the way they want to, and in spite of all the discussion, the greatest motivation for weight loss in a girl is Beauty, Boys, and Bathing Suits, and for weight loss in a boy is Beauty, Girls, and Bathing Suits.

# Depression Among Women in Medicine

ESTHER D. ROTHBLUM, PH.D.

Depression has been termed "the common cold of psychiatry." Although depression rates are high in both sexes, women consistently present higher rates of depression than men, usually at a ratio of 2:1 (Weissman & Klerman, 1977). The 2:1 ratio of depressed women to men is evident both for people under treatment of depression and for large samples of nonpatients drawn randomly from the general population.[12] Suicide rates, however, are higher for men than for women. Furthermore, it has been postulated[12] that lower depression rates for men are complemented by higher rates among men of alchohol and drug abuse.

The point prevalence (defined as the proportion of the population that has a specific disorder at a specific point in time) for depression ranges from 3.7% to 4.7% in the U.S., with women's rates exceeding those of men.[1] Life time risk for developing depression ranges from 2% to 12% for men and from 5% to 26% for women.[1]

The present article has three aims: (1) to describe the criteria of depression; (2) to briefly discuss factors that could account for the sex difference in depression rates; and (3) to focus on the research on depression among women in medicine.

## I. Criteria for Depression

Depression can be considered a mood, a series of symptoms, or a syndrome. The Third Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) of the American Psychiatric Association defines a major depressive disorder to consist of three criteria:

(1) A dysphoric mood or loss of interest and pleasure is present and relatively persistent.

(2) At least four of the eight symptoms of poor appetite or weight loss, insomnia or increased sleep, psychomotor agitation or retardation, loss of interest in usual activities, loss of energy or fatigue, feelings of worthlessness, diminished concentration, and suicidal ideation, are present every day for at least two weeks.

(3) There is no evidence of mania, psychosis, organic mental disorder, or normal bereavement.

Thus, a major depression is a separate entity from the down, "blue," or depressed feeling that most people experience as the result of common stresses of living. A clinical depression is more severe and incapacitating than a temporary sad mood.

## II. Possible Contributing Factors

The higher rates of depression among women are not simply the result of women's greater willingness to seek treatment and thus to be counted as a depression "statistic," since depressed women also outnumber depressed men in community surveys, where most persons are not receiving treatment.[12] Consequently, there has been much speculation about biological factors that could account for the sex difference in depression rates. In the most complete review to date, Weissman and Klerman (1977)[12] have summarized the evidence for possible genetic transmission and for female endocrine physiological processes. The evidence they cite concerning the relationship between depression and genetic factors is inconsistent: there is good evidence for a genetic factor in depression, but studies on x-linkage are conflicting. There is very good evidence that depression increases during the postpartum period. The evidence for premenstrual tension and for depression as the result of oral contraceptives is inconsistent. Finally, there is very good evidence that menopause does not result in higher rates of depression. Thus, further research is needed to clarify the influence of biological factors in depression.

Several environmental factors have been postulated to account for the high rates of depression among women. First, women's roles may be more restricted than men's and allow for less financial, social, or occupational gratification. Secondly, women may be

---

ESTHER D. ROTHBLUM, PH.D., Post Doctoral Fellow in Psycho-social Epidemiology, Yale University School of Medicine. Portions of this manuscript were supported by NIMH Training Grant MH 14235. The author would like to thank Myrna M. Weissman, Ph.D. for her helpful comments. Reprint requests to: Yale University School of Medicine, Department of Psychiatry, and Connecticut Mental Health Center, Depression Research Unit, Suite 2A, 904 Howard Ave., New Haven, CT (Dr. Rothblum).

socialized to be unassertive, dependent, and passive, all of which lead to depression rather than action under stress. Thirdly, as the media increasingly present exceptional women who have "made it" in high-level careers, many women may feel depressed with their own inability to meet these rising expectations. Finally, women may be taught to be helpless and to experience a lack of control over their environment, so that the perception of no relationship between their efforts and any significant results would lead to depression.

The environmental model would lead one to postulate that women who are housewives would have greater rates of depression compared with employed women. Research does indeed indicate that housewives experience more marital friction and are less satisfied with their work than employed married women.[9, 3] Conversely, employment generally has a protective effect for depression; employed women have lower depression rates.

## III. Women in Medicine

Although employment outside the home is protective in reducing the risk for depression, the rates of depression are high among the most educated professionals - physicians. This is true for both male and female physicians. Recent evidence indicates that physicians in general have high depression rates, high divorce rates,[10] and high rates of suicide.[11] As a result, a Task Force of the American Psychiatric Association is currently investigating factors such as depression and alchoholism among physicians. Thus, even this group of successful professionals is not immune from depression. The female M.D. shows the same disproportionate rate of depression as compared with her male counterpart.

A research team in St. Louis, Missouri,[13] investigated psychiatric illness among women physicians and women Ph.D.'s in the community. Their results show that 51% of women physicians and 32% of women Ph.D.'s were clinically depressed. Not only were there more depressed women physicians than women Ph.D.'s, but the M.D.'s were more severely depressed and had had more depressive episodes. Furthermore, 73% of the depressed physicians were psychiatrists. The majority of women reported prejudice in their training or employment defined as " . . . her income was lower than her male counterpart's or that she was strongly discouraged or prohibited from pursuing her career." Sixty-seven percent of depressed women M.D.'s and 70% of depressed women Ph.D.'s reported prejudice; the figures for nondepressed M.D.'s and Ph.D.'s were 50% and 48%, respectively. Thus, prejudice was reported significantly more often by the depressed women, although the authors did not ask whether prejudice was associated with depression. Finally, career disruption was higher both in depressed women and in nondepressed women with children.

In a separate study, Pitts, Schuller, Rich, and Pitt (1979)[8] examined the American Medical Association records of deaths of physicians. They found the suicide rate for women M.D.'s to be 6.56%, higher than that o male M.D.'s and four times higher than the suicide rate for white American females of the same age. Similarly Steppacher and Mausner (1974)[11] analyzed the obituary listings of *The Journal of the American Medica Association* for suicides. Their results indicate that the suicide rate for male physicians was nearly identica (1.15 times) to the general male population; the suicide rate for female physicians was three times the corresponding rate for women in the general population Although additional research needs to corroborate these findings, it seems that physicians of both sexes are at increased risk for suicide.

Almost no research has focused on the components of women's experiences as physicians that could account for the high rates of depression. Both Welner et al (1979)[13] and Nadelson and Notman (1972)[4] attribute prejudice and hostility directed against women physicians as antecedants of depression. Thus, whereas society in general has high regard for women physicians, their esteem among colleagues is less high and may lead to experiences of stress and depression.

Women medical students continue to assume primary responsibility for care of children compared with male medical students.[5] Research has shown that the presence of young children is a risk factor for depression.[7, 2]

Women physicians have a higher divorce rate than male physicians.[10] Studies on the relationship between depression rates and marital status indicate that depression rates are highest for separated and divorced women.

Thus, preliminary results indicate that depression and suicide are elevated among physicians in general and female physicians in particular. Further studies will need to focus specifically on such possible contributing factors as family background, biological precipitants, and work environment of physicians.

### REFERENCES

1. Boyd, JH, & Weissman, MM: The epidemiology of affective disorders. Archives of General Psychiatry in press.
2. Brown, GW, & Harris, TO: Social Origins of Depression. London: Tavistock, 1978.
3. Hall, DT, & Gordon, FE: Career choices of married women: Effects on conflict role behavious and satisfaction. Journal of Applied Psychology 58:1973, 42-48.
4. Nadelson, C, & Notman, MT: The woman physician. Journal of Medical Education 47:1972, 176-183.
5. Nadelson, CC, Notman, MT, & Lowenstein, P: The practice patterns, life styles, and stresses of women and men entering medicine: A follow-up study of Harvard Medical School graduates from 1967 to 1977. Journal of the American Medical Women's Association 34:1979, 400-406.
7. Shapiro, DA, Parry, G, & Brewin, C: Stress, coping and psychotherapy: The foundations of a clinical approach. In Cox,

T, & Mackay, C. (Eds.) Psychophysiological Response to Occupational Stress. International Publishing Co, 1979.

8. Pitts, FN, Schuller, B, Rich, CL, & Pitts, AF: Suicide among U.S. women physicians. American Journal of Psychiatry 136:1979, 694-696.
9. Radloff, L: Sex differences in depression: The effects of occupation and marital status. Sex Roles, 1:1975, 249-265.
10. Rosow, I, & Rose, KD: Divorce among doctors. Journal of Marriage and the Family November:1972, 587-598.
11. Steppacher, RC, & Mausner, JS: Suicide in male and female physicians. JAMA 228:1974, 323-328.
12. Weissman, MM, & Klerman, GL: Sex differences and the epidemiology of depression. Archives of General Psychiatry 34:1977, 98-111.
13. Welner, A, Martin, S. Wochnik, E. Davis, MA, Fishman, R, & Clayton, PJ. Psychiatric disorders among professional women. Archives of General Psychiatry 36:1979, 169-172.

# The Office for Women in Medicine at Yale

K.D. CODISH

**ABSTRACT—The Office for Women in Medicine (OWM) at Yale University School of Medicine was created in response to affirmative action demands and to the passage of Title IX of the Education Ammendments of 1972, which prohibits sexual discrimination in institutions receiving federal funding. The office's design distinguishes it as one of the few organizations of its kind nationwide. In keeping with the most basic principle of the OWM, that of increasing the visibility and accomplishments of women in the medical sciences, we are pleased to present a brief history and description of some of the policies, programs and concerns of the Office for Women in Medicine.**

During the fall of 1980, a member of the research faculty at the Yale School of Medicine reported that women in her department were receiving substantially lower salaries than their male colleagues. The Office for Women in Medicine's (OWM's) director served as liaison between the complainant and other administrative offices at the medical school. As a result, a full-scale comparative analysis of all research faculty salaries was set in motion.

This woman represents one of the many constituents which have made use of the OWM daily since it's inception at the recommendation of the Medical School Council, an advisory body comprised of both faculty and students. In 1975, with the support of Dr. Robert W. Berliner, dean of the School of Medicine, the Office for Women in Medicine was created. Demands for service have increased as the number of women faculty and students has increased. Since 1975, the office has moved from a basement cubbyhole staffed by one part-time student to a centrally located area on the ground floor of the school's Sterling Hall of Medicine. It is headed by a full-time director and staffed by an administrative assistant and a team of volunteers composed of faculty, students and post-doctoral trainees. Dr. Joy Hirsch has recently replaced Drs. Anne Curtis and Ann Oberkirch as faculty advisor to the office. The OWM's director reports directly to the medical school's deputy dean, Dr. Arthur Ebbert, Jr.

The OWM is designed as a service-oriented model concerned with advocacy, program development, counseling, research and referral. It functions as a unit of the medical school administration devoted to achieving equality for women in the traditionally male-dominated medical sciences. None of the issues with which the OWM concerns itself on an on-going basis is specific to Yale. They are specific to women in medicine across the country and include:

—limitations in medical school admissions
—discrimination in hiring and promotion policies
—lack of visible role models
—salary inequities
—limited access to the traditionally "male specialties"

---

KAY CODISH is Director of the Office for Women in Medicine and Liaison Officer for Women for Yale University School of Medicine. In addition, she writes frequently on women artists and arts issues and is Performing Arts Editor of *Connecticut Artists* magazine.

The OWM's constituency is comprised of students, faculty and postdotoral trainees. In consultation with these groups through frequent dialogue and surveys, the OWM has set the following goals:

1. To advance the careers of women students, postdoctorates and faculty at the Yale School of Medicine.
2. To provide a supportive environment for women in medicine and the medical sciences at Yale.
3. To investigate and document the needs of women in the medical center as they themselves express them and to propose and carry out necessary policy changes to satisfy those needs.

To implement some of these goals and objectives the office:

— organizes professional and social support groups for women at the medical school.
— develops a series of programs covering issues as varied as "Toxic Shock Syndrome," "Tenure at Yale," "Reproductive Health Hazards for Women," "Healthcare in Cuba," "Attitudes in Treating the Homosexual Patient," "Dual Career Marriages," "Stress Management," and "Self-Defense for Women."
— organizes statewide conferences such as "Women Meeting Women in Medicine," held at Yale in March and co-sponsored by the Connecticut American Medical Women's Association.
— provides representation on the medical school's Status of Women and Affirmative Action Committees and Medical Center Security Committee through it's administrative director.
— collects affirmative action data to analyze and document the status of women and minorities at Yale.
— provides counseling, advocacy and referral services in grievances concerning sexual discrimination.
— helps maintain a regional and national communication network with other academic, clinical, social and administrative women's medical groups.
— maintains an office with a comfortable atmosphere where women are free to meet, use the growing reference library or simply to relax.

It is probably impossible for an advocacy agency to deal with sensitive and often unpopular issues without becoming an issue itself. The OWM often walks the razor's edge between the medical system as it has existed for hundreds of years and the one many of us intend to see exist within a much shorter period of time.

Statistics show that admission of women to medical schools is slowly but surely on the rise. Demands for services provided by the OWM are certain to increase. In 1977, Dr. Katherine Alden Finseth and Lisa J. Anderson, two of the pioneers of Yale's OWM, called for a "critical mass of women in the profession" and "more concrete assistance" through the OWM. Finseth, in the November, 1977 issue of the "Journal of Medical Education" (52:928-930), said "knowledge and concern . . . are not enough. Tangible administrative support, faculty time and committment and the involvement of a broader segment of the medical community are needed . . . The OWM at Yale is . . . one model of how these factors can be combined within a medical school to have an impact on the lives of women in the medical profession."

The 1981 Office for Women in Medicine at Yale is well on it's way to fine-tuning areas of existing accomplishment and developing additional advocacy, information and educational services to help women in the Medical professions reach that "critical mass."

# The Second Regional Conference on Women in Medicine

CLAIR M. CALLAN, M.D.

The "Second Regional Conference on Women in Medicine" was held at the Rockefeller University and Cornell University Medical College in New York, April 10-12th.

Additionally, sponsors included the American Medical Women's Association, the Women's Medical Associations of Connecticut, New York City, New York and New Jersey, the AMWA Professional Resources Research Center, and the American Medical Association.

Over five hundred women physicians (plus a few males), house officers, medical students and other health professionals dealt head-on with sex discrimination in both the medical profession and in women's

---

REPORT COMPILED BY CLAIR M. CALLAN, M.D.

health care. The conference was sold out and several would-be late registrants found that they could not attend because of lack of space.

Several speakers alluded to the difficulty women have in being accepted as serious physicians. Natalie Shainess, M.D., a psychiatrist who has been leading an assertiveness training program for women physicians since 1979 assured the audience that "the significance of an individual's will and determination cannot be understimated." However, she felt that women still tend to worry about what other people think. Their need to feel loved is overriding, and this tends to lead them to rationalize a situation as "I must be wrong," rather than "I think I am right." Women tend to be shoved aside in an emergency situation because they are not accepted as physicians.

Marcelle Willock, M.D., an anesthisiologist, who is also a Ph.D. candidate at Columbia, questioned whether women physicians were seeing "the dawn of a new day, or the start of a decline." Women physicians generally have low, nontenured positions, mostly connected with students. Women, she believes, are better suited to academia rather than clinical practice. However, they do spend many more years at a low level before being promoted. Female faculty tend to spend more time on patient care than in research. The commission on the status of women has found that has not improved significantly over the past nine years. Women need to question the reason for inequalities. They should ask deans and committees to review their hiring guidelines, salary scales, and research time. Women have a lot to learn from the male support network—particularily the "old boy" referral system.

Rita Newman, M.D., a psychiatrist noted for research on the attitudes of both women physicians and psychiatrists, stated that "Women are torn between the needs of their families and the needs of their practices." Some women physicians are ambivalent about their role as a physician, refusing to reveal in a social situation that they are a physician. Dr. Newman emphazied the importance of networking for women physicians.

Naomi Bluestone, M.D., associate clinical professor of community health at Albert Einstein College of Medicine, discussing the under-representation of women in the medical power structure said, "Women physicians comprise less than 3% of full professors in medical schools, and there is not one full time Dean of a medical school in the United States." Although ten per cent of practicing physicians are women, few make it to leadership positions; it takes the average woman in medicine twice as long as a man to get a promotion.

In a panel discussion of menopause, Dr. Lila Wallis, director of the conference and Associate Clinical Professor of Medicine at Cornell University, took a controversial stand in favor of estrogen replacement therapy. "While most women require no treatment, some women can benefit from hormone therapy; the initial fear of endometrial cancer is diminished when sequential progestogen is added to the cyclical estrogen," she said. But Dr. Wallis cautioned that the physician must be knowledgeable in maintaining the complex regimen, must use it only with carefully selected patients, and "fine-tune" each patient's therapy. "Of the few women who require the replacement therapy, the overwhelming majority need the treatment only for the transition, a short period of time," she said.

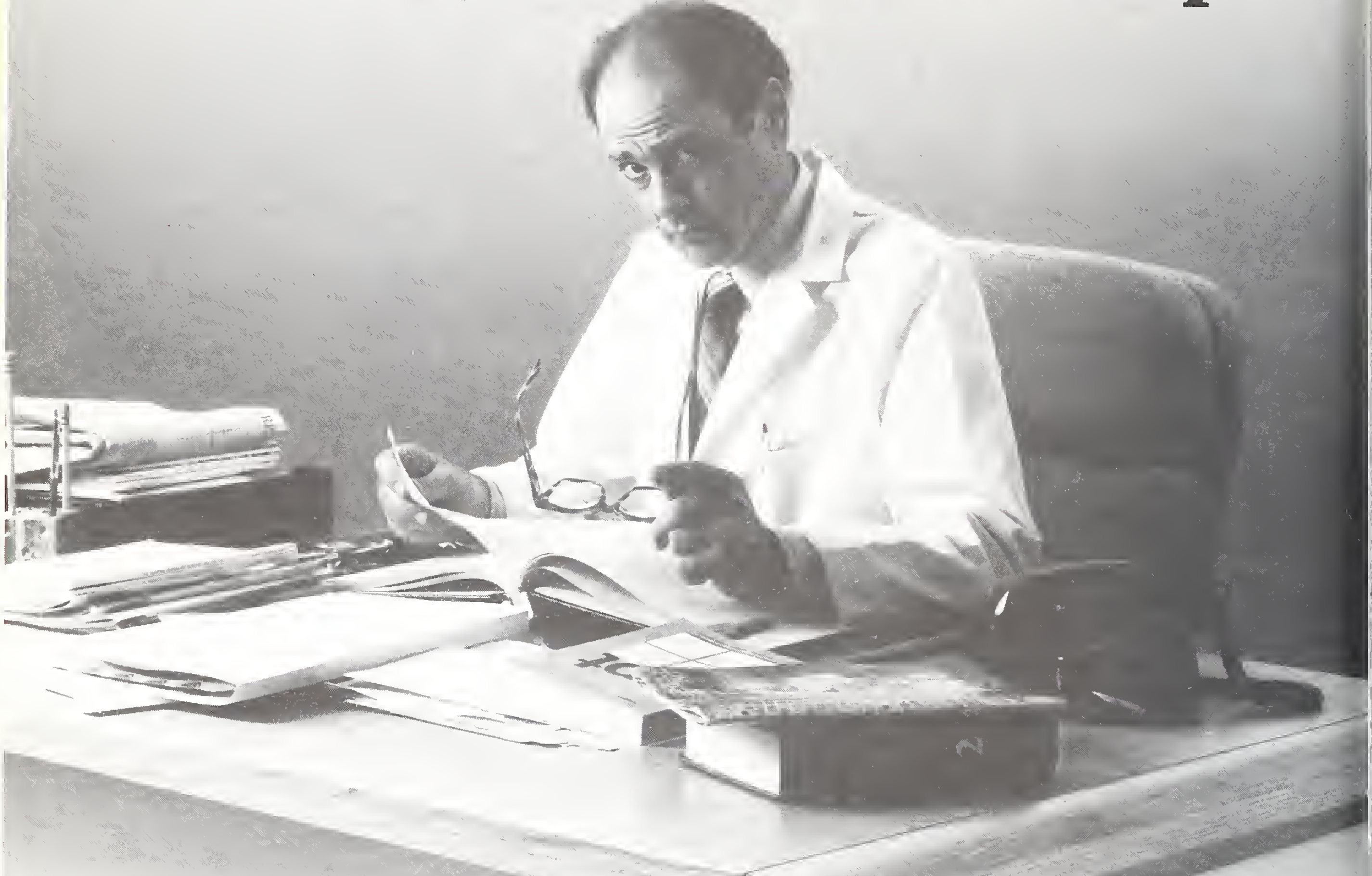
Constraints that limit expansion of the woman's role in medicine were explored from varying viewpoints. Christine Haycock, M.D., associate professor of Surgery at New Jersey College of Medicine, said, "Women physicians traditionally have been locked into the lower-paying fields. Only now are they branching out into the higher-paying surgical sub-specialities, but the resistance is strong." Dr. Haycock encouraged women to enter the traditionally male bastion of sports medicine, where they can contribute "a much needed measure of patience, excellent dexterity, and compassion."

Helen Rodriquez-Trias, M.D., associate clinical professor of Pediatrics at Columbia, said that affirmative action is in jeopardy because of the political shift to the right. "The threat to affirmative action is a threat to minority enrollment. The outlook for women in medicine right now is bleak. Minority enrollments are decreasing, so for minority women things are doubly bad," she said.

The problems of women doctors as women were discussed by husband and wife doctors Carol and Theodore Nadelson, professors of psychiatry at Tufts University School of Medicine. "Dual careers are difficult," Dr. Carol Nadelson said. "Competitiveness, isolation and anger must be confronted rather than avoided. Stress is inherent in a dual career marriage, but it is worth it."

Dr. Wallis summarized, "There is a clear interrelationship between advances in the professional leadership of women physicians, the involvement of consumers in issues of education and training of physicians, and improved enlightened health care of women." She concluded, "It is up to women doctors, women patients, and enlightened male doctors to join together and insist on more and better research in the field of women's health, more teaching of the information that we do have, and more sensitive treatment to guard the health and well being of more than half our population."

# We're looking for doctors who think they don't need a compute



*Because they think a computer is too expensive.*

The Sequoia Medical System™ can pay for itself:

- Increased collections
- Decreased receivables
- Improved staff efficiency

*Because they think they already have firm control of their billing.*

The Sequoia Medical System automatically processes billing paperwork:

- Patient statements
- Third party claims
- Collection letters

*Because they think they have easy access to vital practice data.*

The Sequoia Medical System provides information immediately:

- Aged receivable reports
- Procedure and diagnosis analysis
- Daily production and revenue analysis
- On-line access to 4½ million medical journal articles in the National Library of Medicine
- And many other types of essential data

*Because they think a computer is administratively disruptive.*

The Sequoia Medical System is designed to blend smoothly into solo and small group practices:

- Easy to use
- Pre-programmed, turn-key system
- Includes training, installation, local service and support.

*Because they haven't seen a Sequoia Medical System.*

Sequoia can provide more time f health care in your practice. Whil it's taking care of business . . . you' taking care of patients.

Start looking into the benefits of computer today by calling Sequoia Group. Call toll free (800) 227-2360; in California (800) 772-2655 . . . or write for ou brochure.

**SEQUOIA GROUP™**
INCORPORATED
1100 Larkspur Landing Circle, Larkspur, CA 94939
Atlanta, Baltimore, Birmingham, Boston, Buffalo, Charlotte, Chicago, Cleveland, Columbus, Dallas, Denver, Detroit, Houston, Indianapolis, Irvine, Kansas City, Los Angeles, Memphis, Miami, Minneapolis, Nashville, New Haven, New Orleans, New York City, Norfolk, Oklahoma City, Philadelphia, Phoenix, Pittsburgh, Portland, Salt Lake City, San Diego, San Francisco, Seattle, St. Louis, Tampa, Washington, D.C.

# Patterns of Frozen Plasma Use

JEROME A. SILBERT, M.D., JOSEPH R. BOVE, M.D., STUART DUBIN, M.D., Ph.D.
AND W. STEVEN BUSH, M.D.

**ABSTRACT—Long term trends in frozen plasma (FFP) use were analyzed using Connecticut Red Cross distribution reports and patterns of FFP use were studied prospectively at Yale New Haven Medical Center (Yale and the West Haven V.A. Medical Center (V.A.). Fifty consecutive users of FFP were studied at each center. Indications for FFP were divided into three categories: Volume replacement, correction of coagulopathy, both volume and coagulation together on the basis of the patient's physicians' stated reason and review of laboratory data. A dramatic increase in relative and absolute FFP use was demonstrated for the VA, Yale and the Connecticut Red Cross System. In the prospective study, the Surgical Services used over 75% of the FFP. Volume replacement was the sole indication for 50% of the FFP used. Sixty percent of FFP used was for 15% of patients who were bleeding profusely. In many instances where FFP is used, there are insufficient controlled studies to form a scientifically sound basis for FFP Therapy.**

## Introduction

Over the past several years the use of fresh frozen plasma (FFP) has increased dramatically at our hospitals and throughout Connecticut. This increase has been both absolute, and also relative to the amount of whole blood and packed red blood cells transfused.

This dramatic and costly change has occurred in the face of ill defined indications for the use of FFP, widespread availability of specific components for diseases formerly treated by it (e.g. hemophilia), and larger amounts of source plasma being processed into albumin and plasma protein fraction. If we are to use the plasma portion of our national blood resource efficiently, we must first learn what current practice and patterns of use are. To this end, we reviewed by direct contact with the ordering physicians, the reasons why FFP was considered appropriate therapy in approximately 100 consecutive patients, half of whom were treated at the Yale-New Haven Medical Center (Yale) and the others at West Haven Veterans Administration Medical Center (VA).

## Methods

Because it is difficult to appreciate the reasoning behind clinical decisions retrospectively, we chose to evaluate why clinicians were ordering fresh FFP by review at the time the plasma was given. Shortly after the plasma use one of us reviewed the chart and the laboratory data, and in almost all cases, talked directly with the ordering physician. No attempt was made to select cases and each unit of FFP ordered was followed up on a unit-by-unit basis until approximately 50 consecutive patients had been reviewed. Plasma used by pediatric patients at Yale was not included in this review. No attempt was made to influence the physicians ordering FFP, and examination of frozen plasma use during this period showed no obvious difference from non-survey periods.

The indications for FFP were divided into three categories: volume replacement, correction of a coagulopathy, both volume and coagulation disorder together. Units were classified as "used for volume replacement" if the patient's physician gave this as an indication.

---

JEROME A. SILBERT, M.D., Assistant Professor of Laboratory Medicine and Pathology, Departments of Laboratory Medicine and Pathology, Yale University School of Medicine; Director of Clinical Pathology, West Haven Veterans Administration Medical Center. JOSEPH R. BOVE, M.D., Professor of Laboratory Medicine and Director of Transfusion Services, Department of Laboratory Medicine, Yale University School of Medicine. STUART DUBIN, M.D., PH.D., Director of Laboratory Medicine, Yale University School of Medicine; former Resident, Department of Laboratory Medicine, Yale University School of Medicine. W. STEVEN BUSH, M.D., Associate Pathologist, Eisenhower Medical Center, Rancho Mirage, CA; former Resident, Department of Laboratory Medicine, Yale University School of Medicine.

Units were classified as "used for coagulopathy" if the physician gave this reason and if review of coagulation tests before transfusion of FFP showed abnormalities. In those few cases where coagulation studies prior to FFP use were not available, the units were classified in accord with the physicians' stated reason.

Blood and plasma use were estimated from the monthly distribution reports of the Connecticut Red Cross Blood Center. The Blood Center also records data on the amount of whole blood (WB) converted to red blood cells (RBC) and the number of units of WB and RBC transfused by means of daily reports submitted by all Connecticut hospitals. The number of units transfused is under-reported due to some loss of data between the Blood Center and the individual hospitals. However, the ratio of RBC transfused to total blood transfused is accurate as there is the equal probability of under-reporting both RBC and WB. The distribution figures are accurate as the Blood Center is the sole distributor of FFP, WB and RBC in Connecticut. Thus, the distribution figures, after correction for units outdated or converted to RBC, accurately reflect the utilization pattern of the State as well as its individual hospitals. The use of FP relative to RBC and WB was calculated by dividing the distribution figures for FFP by the total RBC and WB distributed after correcting for outdating and conversion to RBC.

## Results

By 1979 (using 1973 as the base year) the use of FFP had increased 950% in Connecticut, 667% at Yale, and 2970% at the VA (Figure 1). This increase was also relative to the transfusion of RBC cells and WB (Figure 2). The relative increase in FFP use from 1973 to 1979 was 426% for Yale, 2440% for the VA, and 696% for Connecticut.

Data on FP use are summarized in Figure 3. At the VA, 87 units of FFP were used on the medical service. Of these, 34% were used for volume replacement, 14% for the treatment of a coagulation disorder, and 52% were used for both volume and the treatment of coagulopathy. Two hundred sixty one units of FFP were used on the surgical service at the VA. Of these, 48% were for volume replacement, 23% for coagulation and 28% for both. Twenty five percent of FFP units were used on the medical service at the VA as contrasted with 5% on the Yale medical service.

On the Yale medical service only 10 units of FFP were used, 3 for coagulopathy and 7 for both coagulopathy and volume. One hundred ninety nine units were used on the Yale surgical service. Of these, 57% were for volume replacement, 11% for coagulation disorders, and 32% for both coagulation and volume. Combining the data, 102 patients used 557 units of FFP during the period of the survey. Of the total 78% was used by surgical patients. The remaining 22% was used by medical patients, almost all of them at the VA.

Fig. I.- BLOOD AND PLASMA USE

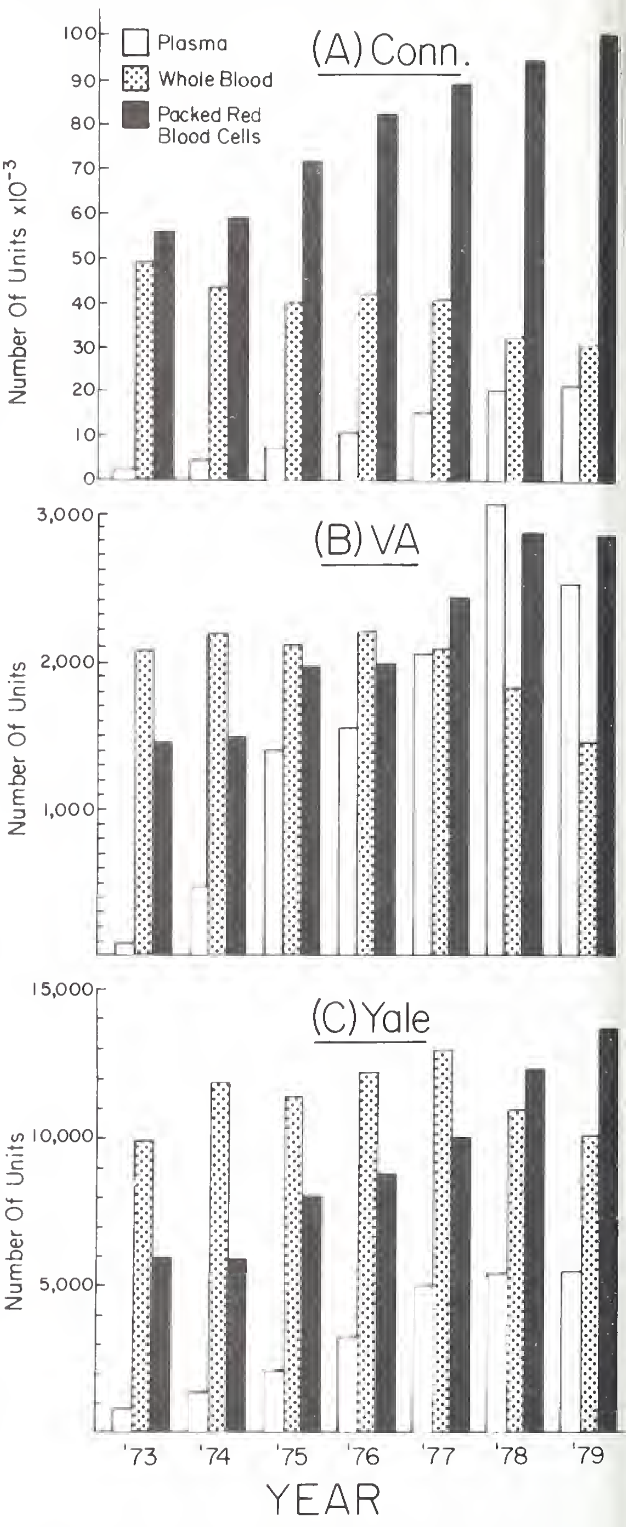


Figure 1
The number of units of WB and RBC transfused in and the number of units of FFP distributed to: (A) All Connecticut hospitals, (B) the West Haven VA Medical Center, and (C) Yale-New Haven Hospital, in the years 1973 thru 1979. The data derives from the Farmington Red Cross Blood Center reports on blood and plasma distribution together with Blood Center figures on conversion of WB to RBC.

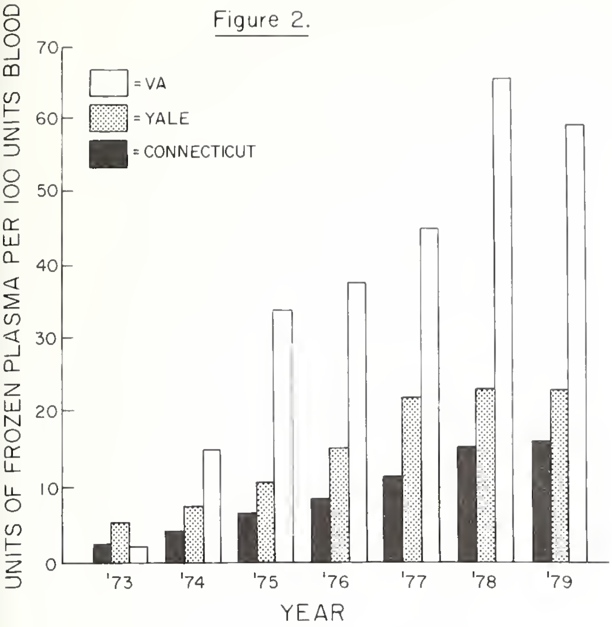


Figure 2
The amount of FP distributed to all hospitals in Connecticut (solid bars), Yale-New Haven Hospital (dotted bars), and the West Haven VA Medical Center (clear bars) expressed as units of FP distributed per 100 units of WB and RBC transfused in the years 1973 thru 1979.

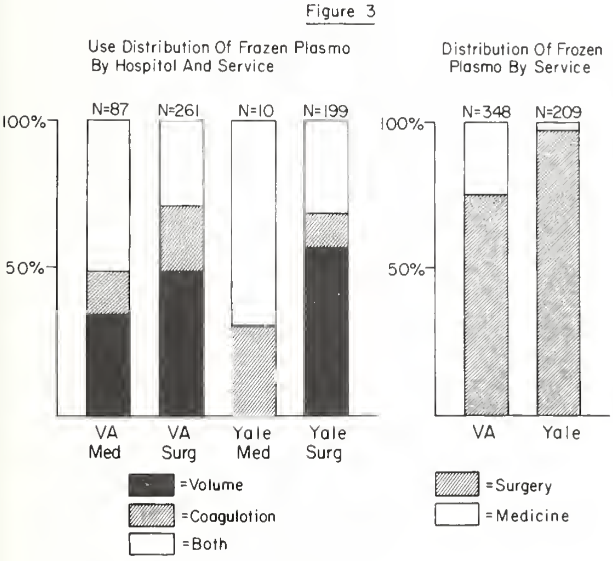


Figure 3
A. Proportion of FFP transfused by use category (Volume replacement, treatment of coagulation together) by the hospital and by service, N=number of units.
B. Proportion of FFP transfused by Service, N=number of units.

Fifty two percent of the units used by surgical patients and 31% the units used by medical patients were for volume replacement.

The data with respect to category of use concerns only that plasma used during the period of the survey. In many patients larger amounts were used than were recorded during the survey period. One patient with severe burns, for example, used six units during the survey but 66 over her 2 month hospital course. Thus, the survey period does not truly reflect the amount of FFP used per patient over the entire hospital course. Since the latter is also relevant, we analyzed FFP use over each patient's entire hospital course.

Many patients had more than one transfusion episode. By our definition, a new transfusion episode begins when 24 hours have elapsed since the last transfusion. Of considerable interest is the fact that in the VA study, the number of units used by those patients requiring more than 15 units per transfusion epidsode constituted over 65% of the total number of units transfused to patients entered into the survey. These patients constituted only 20% of the total number of patients in the VA survey (see Figure 4). A similar pattern prevailed at Yale where 10% of the patients used almost half (48%) of the plasma (see Figure 5).

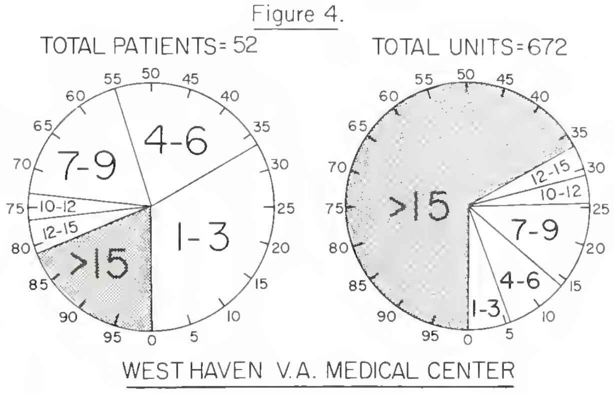


Figure 4
A. The percent of total patients in the VA survey using 1-3 units of FP per transfusion episode, 4-6 units, 7-9 units, etc.

B. The percent of total FP used during the entire hospital course of patients entered in the VA survey for the groups of 1-3 units of FP per transfusion episode, 4-6 units, 7-9 units, etc.

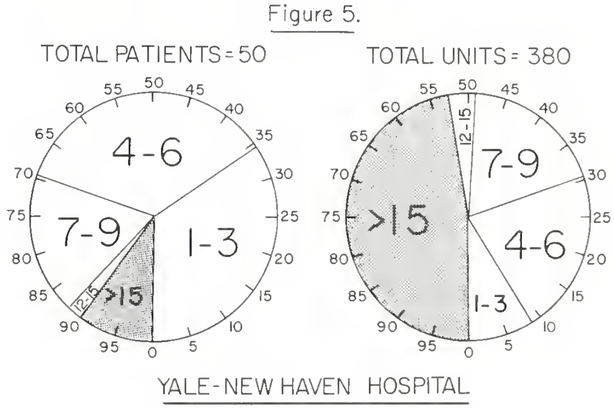


Figure 5
A. The percent of total patients in the Yale survey using 1-3 units of FP per transfusion episode, 4-6 units, 7-9 units, etc.

B. The percent of total FP used during the entire hospital course of patients entered in the VA survey for the groups of 1-3 units of FP per transfusion episode, 4-6 units, 7-9 units, etc.

Data on coagulation studies before and shortly after FP transfusion were available on 30 patients. Of this group, 16 patients did not change or became a worse and 14 patients improved, usually modestly.

## Discussion

The use of FFP in our hospitals has markedly increased since 1973. A similar trend has also occurred in other Connecticut hospitals. This increase is not simply a matter of a general rise in blood and blood product use, as the use of FFP has grown more rapidly than that of WB and RBC. Similarly the increase in FFP transfusion is not due to more patient days in the VA or Yale, as the number of patient days per year in both institutions has been essentially stable over the period 1973-1978. Could it be that FFP is being used in place of albumin and plasma protein fraction? There has not been a simple trade-off between FFP and albumin products since use of albumin also has increased in this period.

Could it be that an increasing proportion of FFP is used in connection with RBC as a substitute for stored whole blood? If FFP had been used to convert even a small fraction of RBC to the equivalent of WB, one might expect a marked increase in FFP use. However, it is unlikely that FFP and RBC are used as a WB substitute since WB is readily available in Connecticut. Further, WB continues to be converted to RBC within individual hospitals and WB use has continued to decline.

Perhaps the combination of FFP and RBC is being used in preference to WB rather than as a substitute for WB. Perhaps it is thought that FFP and RBC together are "better blood" than stored WB. We found, for example, that virtually all patients were given FFP as part of the treatment of severe bleeding, usually associated with surgery and massive transfusion. Frequently, clinicians rationalized the use of FFP in such patients by saying that two ends were served with one product: First, volume replacement, particularly in cases where large amounts of crystalloid had already been used, and second, prevention of a transfusion induced coagulation defect.

Kahn et. al.[1] have recently reported that 14% of RBC units were used in conjunction with FFP. Applying their findings to the transfusion figures available for Connecticut, 98,597 units of RBC were transfused in 1979. This represents 77% of all blood transfused in 1979. If 14% of the RBCs were transfused with FFP this would have represented 13,804 units of FFP. However, 21,493 units of FFP were distributed in 1979. Thus, it is possible to account for 64% of FFP in this way. This by no means proves that FFP is being combined with RBC to make "better blood", but it does show that a substantial portion of the increase in FFP utilization may be accounted for by this practice. Additionally though this "better blood" hypothesis is speculative, it may account for the fact that over half of FFP use is for volume replacement and not coagulation.

Further, while massive transfusion is often associated with a measurable deficiency of circulating coagulation factors, there is no evidence that this deficiency is either clinically important or can be prevented by the infusion of modest amounts of FFP. Regarding FFP plus RBC as the best substitute for fresh WB has no proven basis. FFP should not be the product of choice for volume replacement with protein solution. The combination of FFP and RBC probably doubles the risk of post-transfusion hepatitis over that of stored WB alone. It is albumin and plasma protein factor that are the products of choice for protein replacement.

There are other reasons why FFP is not the product of choice for volume replacement. In two independent studies it has been reported that if transfused plasma results in even a mild allergic reaction plasma volume may actually decrease instead of increase[2,3]. Additionally, McConn[4] has recently observed that infusions of fresh human CPD-plasma had a deleterious effect on ventricular function in healthy dogs. Interestingly, CPD plasma stored for 21 days had no such effect. In certain clinical settings FFP therapy is useful. However, it would be a mistake to assume its unqualified efficacy in the absence of controlled studies specifically addressing this question.

Even in those instances where FFP was used to correct a coagulation defect the results of pre and post-transfusion coagulation tests showed a disappointingly poor response. Again this does not prove FFP's inefficacy but suggests a more critical attitude toward its use and points to a need for controlled studies regarding the therapeutic role of FFP. Some recent work suggests that in acute hypovolemia, resuscitation with crystalloid is as effective as with colloid[5]. If this is so—as it seems to be—one can rightfully suggest that FFP use be restricted to patients in whom coagulopathy is a real rather than a theoretical problem. Data about its effectiveness in such patients are lacking although the rationale for its use seems clear.

Our data suggest that relatively few patients used a large proportion of the plasma. For example, at the VA, 10 of 50 patients used more than 15 units during a transfusion episode. These patients were only 20% of the total, but used 65% of the plasma transfused during the survey. All but one died during or shortly after their transfusion therapy. A similar pattern prevailed at Yale where 10% of the patients used 48% of the plasma.

Even though the same housestaff and attendings care for patients at Yale and the VA, almost all FFP use by the medical service occurred at the VA. Almost all these patients had cirrhosis of the liver. The greater number of patients with severe alcoholic cirrhosis at the VA may account for the larger amounts of FFP used there.

The bulk of the FFP goes to patients who are bleeding profusely. This observation points to the possibility that a portion of the FFP increase may be due to a changing pattern of disease. Since the few patients with severe hemorrhage account for most of the FFP use, a modest increase in the number of these patients could markedly increase utilization.

Another factor in the use of FFP may be a changing pattern of therapeutic approach. The decision as to when and how to use FFP appears to be, in large part, a matter of local practice. The variation in the amount of FFP used relative to WB and RBC between our hospitals and comparable hospitals in Connecticut suggests that there is considerable latitude in therapeutic decisions regarding the use of this product and that the use of FFP might be substantially decreased without risk and perhaps with some benefit to the patient.

## Conclusion

A trend toward the absolute and relative increase in frozen plasma use has been demonstrated for the VA, Yale and the Connecticut Red Cross system. A prospective study of frozen plasma use at the VA and Yale has shown that 75% of the frozen plasma is used by surgery and 25% by medicine. For approximately 50% of the frozen plasma used, volume replacement was mentioned as the sole indication. Sixty percent of the frozen plasma used was for relatively few patients (15%) who were bleeding profusely. Factors contributing to the increased use of FFP may include the practice of substituting RBC and FFP for WB and a possible (but unproven) increase in the number of patients being given massive transfusions. The considerable variation in FP utilization between hospitals indicates that there is leeway in the use of frozen plasma. In many instances where frozen plasma is now used, there are insufficient controlled studies to form a scientifically sound basis for frozen plasma therapy.

Acknowledgements

The authors gratefully acknowledge Mr. Jay Blutt of the Connecticut Red Cross Blood Center for providing the data on whole blood conversion to red blood cells used in this study.

## REFERENCES

1. Kahn RA, Stagg SD, Miller WV, Ellis FR: Use of plasma products with whole blood and packed red blood cells. *JAMA* 1979; 242:2089-90.
2. Gruber UF, Berguentz S: Autologous and homologous fresh human plasma as a volume expander in hypovolemic subjects. *Annals of Surg.* 1967; 165:41-48.
3. Hutchison JL, Freedman SO, Richards BA, Burgen ASV: Plasma volume expansion and reactions after infusion of autologous and nonautologous plasma in man. *J. Lab. and Clin. Med.* 1969; 56:734-46.
4. McConn R: Massive transfusion and its effect on hemodynamic function in the recipient: The effect of anticoagulant and storage at 4°C on left ventricular work. In: Nusbacher J, ed. *Massive transfusion 1978.* Washington: American Assoc. of Blood Banks, 1978; 33-40.
5. Vergilio RV, Rice CL, Smith DE, et al: Crystalloid vs. colloid resuscitation: Is one better? *Surgery* 1979; 85:129-39.

---

# Reversal of the Uremic Syndrome with Percutaneous Transluminal Angioplasty

MICHAEL REDLER, PAUL LAKIN, M.D., ROBERT LAPKIN, M.D.
AND CHARLES GRAEBER, M.D.

The use of percutaneous transluminal angioplasty in the management of renovascular hypertension has been thoroughly documented in the literature, including this journal.[1] The patient with renal artery stenosis and hypertension associated with renal failure presents a more serious problem that until recently was amenable only to surgical revascularization or chronic hemodialysis. In severely ill patients at high surgical risk, percutaneous transluminal angioplasty offers an attractive alternative for the amelioration of the hypertension and renal failure. We present an illustrative case of a patient with renal artery stenosis, renal failure and severe hypertension requiring hemodialysis who was successfully treated with percutaneous angioplasty.

## Case History

G.L. is a 69-year-old white male admitted because of pruritus, lethargy, nausea and vomiting. He has a past history of myocardial infarction, two cardiac arrests and bilateral carotid endartectomy.

---

MICHAEL REDLER, Medical Student, PAUL LAKIN, M.D., Senior Attending Radiologist, ROBERT LAPKIN, M.D., Associate Attending Nephrologist, CHARLES GRAEBER, M.D., Assistant Attending Nephrologist; all of the New Britain General Hospital, New Britain, CT.

An angiogram performed approximately one year prior to admission demonstrated a high grade left proximal renal artery stenosis with a normal sized left kidney. The right kidney was atrophic with renal artery stenosis as well. Renal vein renins lateralized to the left side. He was managed with propranolol, alpha-methyldopa, hydralazine and furosemide. Serum creatinine had been stable at 4 mg/dl but had recently risen.

On admission he was noted to be severely hypertensive (250/130) and had a diffuse rash attributed to Allopurinol. His weight was stable throughout his hospitalization. A systolic and diastolic bruit was heard over the left epigastrium. There were numerous other systolic bruits throughout. The blood pressure was not adequately controlled despite bed rest, intermittant diazoxide and the addition of minoxidil to his regimen. His uremic symptoms continued and the creatinine rose to 10.4mg%. Hemodialysis was initiated via Shaldon catheters and, despite his veno-venous access, he developed angina on dialysis. Angiography was repeated demonstrating an even more severe left renal artery stenosis with a large pressure gradient across that stenosis (Figure 1). Percutaneous transluminal angioplasty was performed using the Gruntzig balloon catheter; postangioplasty angiograms and pressure tracings are shown in Figure 2. Heparin was administered for two days following the procedure. His blood pressure dropped to 180/90 the day after the procedure. The creatinine slowly dropped to 5.4 mg% without dialysis. He was discharged on minoxidil, alpha-methyldopa, propranolol and furosemide.

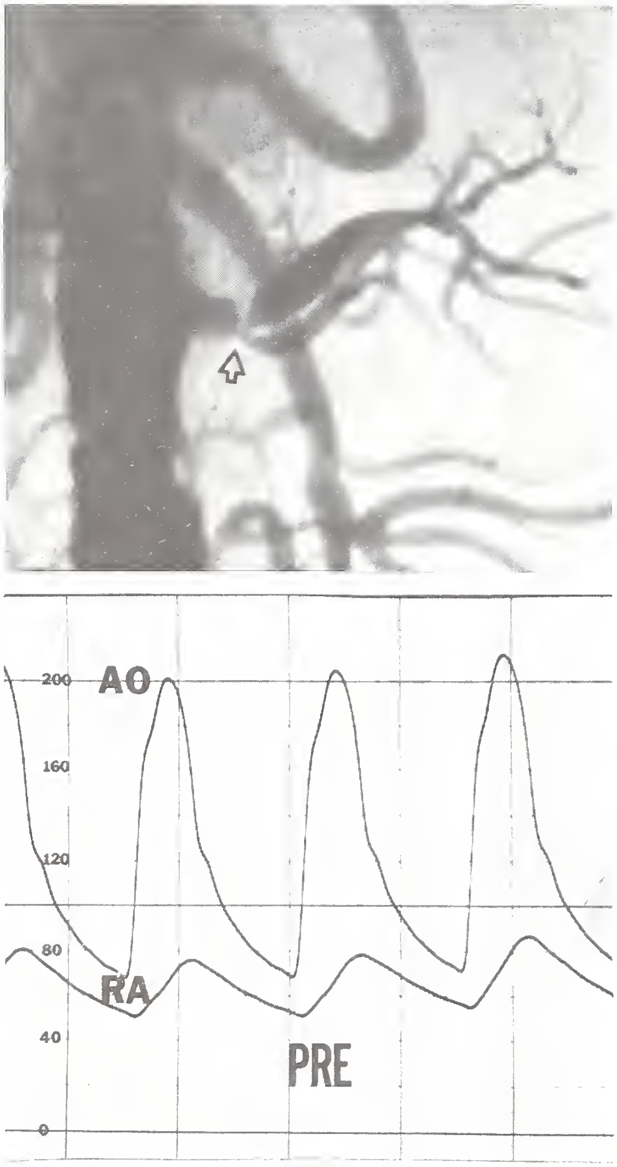


Figure 1
Arteriogram above shows severe left renal artery stenosis prior to angioplasty.

Graph shows arterial pressure tracings from the left femoral artery (AO) and the left renal artery (RA) distal to the stenosis.

## Discussion

The development of the uremic syndrome and severe hypertension secondary to renal artery stenosis has been previously managed by surgical intervention or chronic hemodialysis. Our patient was certainly a high

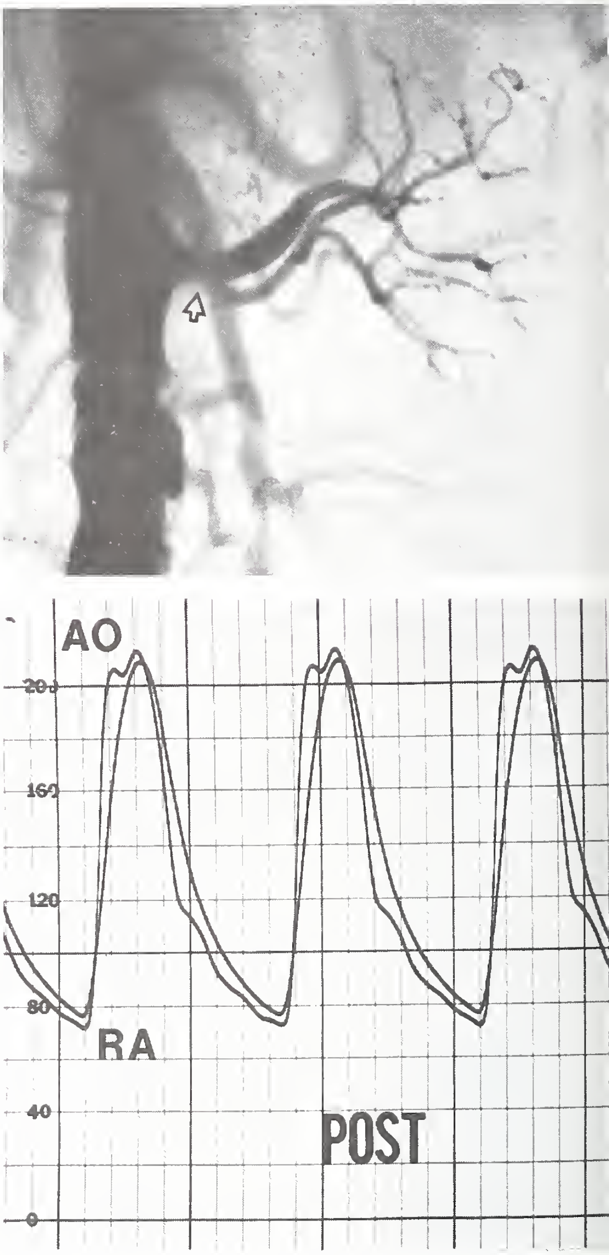


Figure 2
Angiogram following angioplasty demonstrating marked improvement in the stenosis (arrow).

Graph shows arterial pressure tracings from left femoral artery (AO) and distal to the stenosis in the left renal artery (RA) immediately after dilatation.

surgical risk and a relatively poor candidate for the hemodynamic rigors of hemodialysis because of his severe diffuse atherosclerosis and unstable coronary artery disease. Weinberger[3] et al reported several uninephric patients who demonstrated improvement of renal function following percutaneous transluminal angioplasty. Our patient, who was virtually anephric prior to angioplasty, responded with a gradual fall in serum creatinine. His blood pressure was easier to control and he remains asymptomatic six months following this procedure. We conclude that percutaneous angioplasty provides a means by which some patients can avoid the high risks of renovascular surgery and postpone the need for chronic dialysis.

### REFERENCES

1. McCarthy S. Stein S. et al: Renovascular Hypertension Treated by Percutaneous Transluminal Angioplasty. Conn. Med. 778-779, Dec. 1980.
2. Katzen V. Chang J. Lykowsky G. Abramson et al: Percutaneous Transluminal Angioplasty for the Treatment of Renovascular Hypertension. Rad 131: 53-58. 1979.
3. Weinberger M. Yune H. Grim C. et al: Percutaneous Transluminal Angioplasty for Renal Artery Stenosis in a Solitary Functioning Kidney. An Int Med 91: 684-688. 1979.
4. Katzen V. et al: Percutaneous Transluminal Angioplasty with the Gruntzig Balloon Catheter. A Review of 70 Cases. Arch Surg 114 (12): 1389-99, Dec. 1979.

# Thrombosis of the Axillary Artery and Brachial Plexus Injury Secondary to Shoulder Dislocation

AKELLA SARMA, M.D., HARRY SARANCHAK, M.D.,
ELCON D. LEVINSON, M.D., AND ROBERT SIGMAN, M.D.

**ABSTRACT—We present a case of anterior dislocation of the shoulder in a 21-year-old male with unusual complications of the axillary artery and brachial plexus. The age of the patient and proposed mechanism of the complications in this patient's shoulder dislocation are particularly unusual. The axillary artery injury was repaired by excision of the injured segment with vein graft interposition. Surgical intervention was not necessary in the treatment of the neurological injury.**

Compared with the high incidence of shoulder dislocation, associated vascular and nerve injuries are rare. Since 1825, only around 100 cases have been reported, 90 in one paper [1]. We recently encountered a young patient with unusual neurovascular complications due to anterior shoulder dislocation and wish to call attention to the diagnosis and treatment of this injury.

## Case Report

A 21-year-old male involved in a motor vehicle accident was admitted to the Emergency Room with head injuries, left deltopectoral swelling, and abrasions on the anterior chest wall. He has a pulseless left arm and weakness along the radial nerve distribution.

No blood flow could be detected in the arteries of the left arm by Doppler ultrasound. Radiographs of the left shoulder were normal. An aortic arch and selective left subclavian arteriogram (Figure 1) showed an occlusion at the junction of the second and third portions of the axillary artery with minimal filling distal to the occlusion. There was minimal collateral flow to the upper arm.

The patient underwent excision of the occluded segment of the axillary artery, and a saphenous vein graft was interposed between the intact segments of the artery through a deltopectoral incision. The brachial artery was intact. At the end of the procedure, the abducted humerus dislocated easily from the glenoid fossa. In the dislocated position, the head of the humerus impinged upon the vein graft. The dislocation was reduced, the wound was closed, and the shoulder and left arm were immobilized.

Post-operatively, the patient had normal circulation in the left arm. Careful evaluation revealed a complex brachial plexus injury. Weakness of the left deltoid, triceps, biceps and wrist extensors was noted, but there was some sensation along the radial nerve distribution. It was felt that the injury was a neuropraxia affecting the posterior and lateral cords of the plexus. With physical therapy, including range of motion exercises and electrical stimulation of the wrist and finger extensors of the left hand, the patient showed steady improvement in motor and sensory function. He was able to return to work in six months.

## Discussion

We theorize that the patient initially suffered dislocation of the shoulder joint causing the displaced humeral head to disrupt axillary neurovascular structures. The humerus evidently reduced spontaneously,

---

AKELLA SARMA, M.D., Chief Resident in Surgery, University of Connecticut.

HARRY SARANCHAK, M.D., formerly Chief Resident in Surgery, now Clinical Instructor in Surgery, University of Connecticut; Attending Staff in Surgery, New Britain General Hospital, New Britain, CT.

ELCON D. LEVINSON, M.D., Assistant Professor in Radiology, University of Connecticut; Associate Attending Staff, Newington Children's Hospital, Newington, CT.

ROBERT SIGMAN, M.D., Assistant Professor in Surgery, University of Connecticut; Attending Staff in Surgery, Hartford Hospital, Hartford, CT.

Reprint requests to: Department of Surgery, University of Connecticut Health Center, Farmington, CT 06032 (Dr. Sigman).

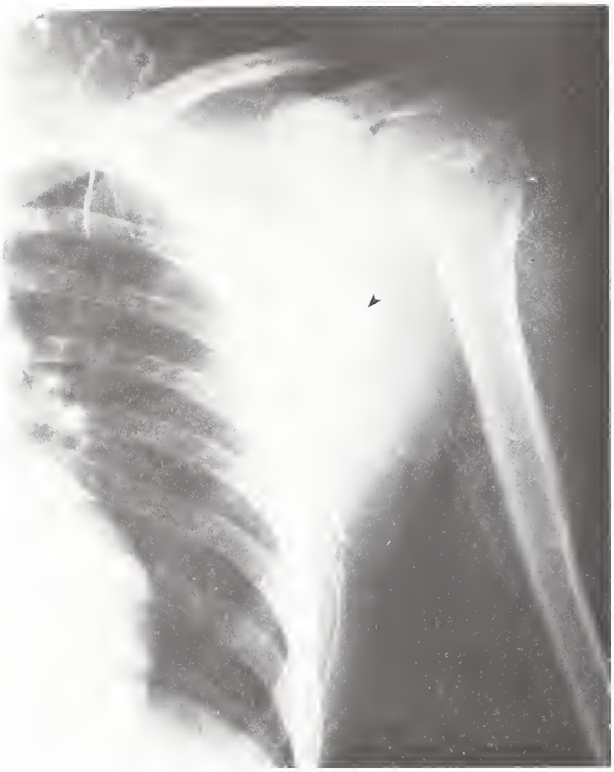


Figure 1

A radiograph from the left subclavian arterial injection shows abrupt change in caliber of the axillary artery with a lucent filling defect (arrow). A thin brachial artery is seen.

and dislocation was not seen on initial radiographs. With abduction of the shoulder on the operating table, the shoulder again dislocated, duplicating the mechanism of neurovascular injury.

Damage to the axillary artery following anterior dislocation of the shoulder can take the forms of intimal tear with thrombosis or complete rupture. In the majority of cases the site of damage is the third portion of the axillary artery near the origins of subscapular and circumflex branches [2]. The proposed mechanism of injury relates to the relative fixation of the artery at the lateral margin of the pectoralis minor and anchoring effect from parts of the brachial plexus which encircle the artery. The border of the pectoralis minor can act as a fulcrum on which the artery can be injured by being compressed and stretched around a hyperabducted, dislocated humeral head [3]. The vascular injury occurs more commonly in older patients whose atherosclerotic vessels tear rather than stretch when stressed. Injury may also occur at the time of forcible manipulative reduction of shoulder dislocation, again primarily in the elderly. If forcible closed reduction is attempted on an old anterior dislocation, scar tissue binding the artery further predisposes to vascular injury. Of the 90 cases reported by Calvet and associates [1], 55% were fatal and many of the rest of the patients lost the arm or its use. The majority had reductions performed many weeks after the initial shoulder dislocation. Suboptimal anti-shock treatment and surgical technique also probably contributed to the poor results.

In the past, the results of end-to-end anastomosis were disappointing, but with improved technique in vascular surgery it is the method of choice [2]. An alternative in patients with severe arterial injury is simple ligation of the injured segment of the artery, but results of arterial ligation have been poor [1]. Older patients often have poor collateral circulation to the arm. Also, patients may do poorly with ligation if collaterals as well as the axillary artery itself are damaged either during the initial shoulder injury or in reduction. A hematoma can further compromise circulation and, if there is shock with hypotension, opening of collaterals is retarded [4]. A deltopectoral incision is an acceptable way to expose the artery, if need be dividing the pectoralis muscle to gain exposure. After one obtains a good view of the vessels, simple closure of the arterial tear, a graft interposition as was performed in our patient, and end-to-end anastomosis after excision of the thrombosed segment, can be done. The resection of the damaged segment should be extended until one reaches normal arterial tissue before one makes the anastomosis [2].

Neurological injury following dislocation of the shoulder has also been reported infrequently, usually affecting the axillary nerve [5]. Traction-type injury to the brachial plexus is even rarer. Surgical intervention is usually not needed with nerve injury due to dislocation, but patients with this complication should begin physical therapy as soon as feasible after reduction of the dislocation and repair of vascular damage. Recovery of shoulder mobility is often prolonged and less complete than in those without the nerve damage. During convalescence in a local injury such as our patient sustained, the most important elements of treatment are supportive measures for the involved arm including prevention of joint stiffness by passive range of motion exercises.

## REFERENCES

1. Calvet, Leroy, Lecroix: Luxations de l'épaule et lésions vasculaires. J Chir 58: 337-346, 1941 - 2
2. Brown FW, Navigato WJ: Rupture of the axillary artery and brachial plexus palsy associated with anterior dislocation of the shoulder. Clin Orth 60: 195-199, 1968
3. Gibson JMC: Rupture of the axillary artery. J Bone Joint Surg 44B: 114-115, 1962
4. Johnston GW, Lowry JH: Rupture of the axillary artery complicating anterior dislocation of the shoulder. J Bone Joint Surg 44B: 116-118, 1962
5. Blom S, Dahlbäck LO: Nerve injuries in dislocations of the shoulder joint and fractures of the neck of the humerus. Acta Chir Scand 136: 461-466, 1970.

# Complacent Infantile Starvation

## ARNOLD A. HEIGER, M.D.

**ABSTRACT—Two cases of infantile starvation of breast-fed children are presented. Recommendations to prevent its occurrence are suggested.**

It is written in the Talmud[1] that "the poor man is hungry and does not know it . . . he no longer realizes it." Nelson[2] considers marasmus in some breast-fed infants as a failure of the initiation of a natural hunger cycle. "Most infants are usually sleepy for several days . . . most healthy babies wake up and become good eaters on the fourth day." La Leche League[3] refers to a "placid polite baby who regularly sleeps four to five hours. As time goes by he seems to get even quieter . . . " Failure to thrive of breast-fed babies with no organic pathology has been experienced over the years and explanantions thereof concern themselves with an inadequacy of breast milk or with problems of infant-bonding and maternal judgmental error.

KK was a two-week-old white female brought for routine care and test for Phenylketonuria. She was born at Bridgeport Hospital and weighed eight lbs six oz at birth. Her Apgar score was nine-ten. She was breast-fed in the hospital and discharged on day three in apparent good health. The mother stated that she had minimal difficulty with her nipples and did experience her breasts filling. After discharge she fed her baby on a three-four-five hour semi-demand schedule. The feedings became less frequent because she had to wake the baby for each feeding and she thought that feeding every five hours was sufficient. When awakened, the baby would suck about five minutes on each breast before falling asleep. She rarely cried and always seemed content. She had a wet diaper three times daily and an average of one B.M. each day.

At examination the baby weighed six lbs seven oz and was severely cachectic with a sad expression. The remainder of the examination was negative except for some spasticity of the legs. The parents were shocked to learn of my concern about the welfare of the baby even after being apprised of her weight. The mother had been dieting and now weighed less than she had prior to her pregnancy. Her breasts no longer felt full nor did they leak. Manual expression of the breasts after 15 hours of formula feeding resulted in the collection of one ounce from one breast and one and one-half ounces from the other.

Enfamil feedings of three ounces every three hours with coaxing resulted in a weight gain of seven ounces in two days. The baby seemed more alert with increased activity. Five days later she weighed seven lbs ten oz and was waking by herself every three hours. Two weeks later she weighed eight lbs nine oz and was much more alert. She still had some minimal spasticity of her legs but examination was otherwise unremarkable.

KM was the third child of a 36 year old mother. She was the product of a normal delivery weighing seven lbs 14 oz. At birth she had an Apgar of nine-ten and it was discovered that she had congenital dislocation of the left hip. She was casted immediately. At two weeks of age she appeared somewhat undernourished but weighed eight lbs 1 oz with the cast. She was nursing every three-four hours for about ten-fifteen minutes in total. At four weeks of age her cast was removed and she was found to weight six lbs twelve oz. At this time the mother stated that she nursed every three hours but had to be awakened for each feeding and nursed only about five-ten minutes with much prompting. The mother wanted desperately to continue nursing so the baby was put on rice cereal three times a day. One week later it was found that the baby had gained four ounces and the following week she had gained another five ounces. At two months of age she weighed seven pounds nine ounces and I was finally able to convince the mother to supplement with formula.

These two case histories are similar in that both mothers were content with the progress of their starving infants and were astounded that the babies had indeed lost weight, apparently unable or unwilling to recognize the evident cachectic condition of their infants.

---

ARNOLD HEIGER, M.D., Private Practitioner, Pediatric Associates of Cheshire; Attending Physician, Yale-New Haven Hospital, The Hospital of St. Raphael and Waterbury Hospital.

## Discussion

Gilmore and Rowland[4] state that in certain situations the nursing mother may fail to supply adequate nutrition to the baby. These two sets of parents falsely interpreted lack of crying and extended sleeping as a sign of satisfactory progress. They report that undernourished but content breast-fed babies are a recognized phenomenon.

Davies[5] described a reduced suckling drive as being responsible for contented infants failing to thrive. Over-anxious mothers or faulty feeding techniques may compound the problem. The Dairy Council Digest[6] reports that malnutrition modifies the mother-child interaction by affecting each partner. The child is apathetic, exhibits decreased responsiveness, and elicits less of a response from the mother.

The production of breast milk occurs at a constant pace . . . fat and protein globules are excreted passively without muscular contraction. This milk, called foremilk, contains about 2% fat and constitutes approximately one-third of the total milk volume. As a result of suckling, neurohormonal influences cause a sudden explosion of fat and protein into the milk (referred to as "let down"). This portion of the milk is called hindmilk and contains 4-7% fat. If the let-down is faulty, the baby will get only foremilk which is qualitatively and quantitatively inadequate to sustain it.

The combination of infant apathy and a decreased quantity and quality of breast milk seem to lead to a vicious cycle. Evans and Daniels[7] describe four infants who had a tendency to sleep for prolonged periods and whose mothers were happy with their infants' progress-reassured that the "breast is best and a hungry baby is a crying baby." These babies became rapidly malnourished. Jacobs[8] calls this the Buchenwald-baby Syndrome.

It has become apparent to me that most pediatricians run into this problem in their practice and that close vigilance to the situation is necessary. The actual frequency of complacent starvation is difficult to assess. In my own practice I have seen two cases in seventeen years. Personal communication with other pediatricians indicate that the problem is very infrequent.

Instructions regarding breast feeding should include the admonition to feed every three hours during the daytime even if waking the baby is necessary. Remarks regarding the expected frequency of wet diapers with almost every feeding and advice to call if this does not occur regularly should be part of the initial contact with the mother. Most pediatricians prefer to have a prenatal conference with the expectant mother at which time an assessment of the mother's attitude and capabilities may be made. Certain mothers may seem more sure of themselves but this should not lead to a false sense of security on the part of the physician. Parity of the mother is no criterion as to whether or not difficulties may arise. In those instances where there is some question regarding the capability of the mother, a telephone contact should be made after about one week. It is equally important to convince the mother that adequate nutrition on her part is a vital necessity.

### REFERENCES

1. Talmud . . . Megillah 7b
2. Vaughn V.C., McKay R.J., Nelson W.E.: Textbook of Pediatrics: ED 10 Phil: WB Saunders Co: 1975: P. 165-7
3. La Leche League: The Womanly Art of Breastfeeding: Franklin Park Ill.: La Leche League: 1963: p. 69
4. Gilmore H, Rowland T: Critical Malnutrition in breast fed infants: Am J Dis Child: 1978: 132:885
5. Davies D: Inadequacy of breast feeding, failure to thrive may be linked: Ped News: 1979: Vol 13 #11 P54
6. Dairy Council Digest: 1979: Vol 50:#5
7. Evans D.P., Davies T.I.: Failure to thrive at the breast-an old problem revisited: Arch Dis Child: 1977: 52:974
8. Jacobs J: Breast feeding and malnutrition: Am J. Dis Child: 1979: 133:756

# The Fiscal Impact of Hospital Regulation

MALCOLM D. CRAWFORD, M.B.A.

Rising health-care costs—in total and as an increasing percent of gross national product—are a matter of concern both within and outside the health-care field. Thus far, most of this concern has focused on hospital costs, which account for 40 percent of all health-care expenditures and provide a convenient target for those who would regulate what they are neither responsible nor accountable for managing.

Since the end of the federal Economic Stabilization Program in 1974, government regulation has been concentrated at the state level, where presently 25 states have instituted some form of hospital rate-setting or budget review program. Of this number, six states, including Connecticut, have mandatory programs that are conducted by a state agency (as contrasted with a hospital association), which include most hospital expenses, and where compliance is mandatory.

The distinguishing feature of these programs is that, by and large, they are a simplistic approach to a complex problem, and invariably they are arbitrary. Connecticut's regulation has been particularly onerous in that its administration has been based on the false premise that hospitals control their volume of patient services, and if they fail to do so, they are penalized for such growth and/or development of new or expanded services.

The most obvious impact of such regulation is financial, in terms of reduced operating margin—the "bottom line." In New York, which is generally acknowledged to have the most severe regulatory program in the nation, 195 of 245 hospitals reported net operating losses in 1979. In Connecticut, 16 of 36 general hospitals experienced net operating losses in 1977; by 1980 that number had grown to 25.

Hospitals generally operate with small operating margins in relation to volume. Cash flow from operations goes first to pay salaries, for services and supplies and to support patient receivables, with any balance then going to fund depreciation. Various methods of depreciation fail to take into account technological advances in the "state of the art," which, when combined with inflationary price increases, means that it is virtually impossible to replace obsolete or worn out equipment solely from funded depreciation.

And when capital funds are further depleted by marginal or loss operations, then hospitals are indeed eroding their capital structure. Often, such erosion does not show up for several years, and is also reflected in higher future borrowing costs that flow from poor operating results and a lowered bond rating.

From an operating standpoint, the impact of regulation manifests itself in the cost of compliance and more importantly in a relentless squeeze on operating resources. As revenues and expenses are constrained, staff and facilities required to carry out or expand existing programs or to start new programs become unattainable. Many quite beneficial medical programs, including health education and preventive medicine, cannot be shown to be institutionally cost effective, particularly over the short run. If the financial payback is not immediate, most such programs will not fit the regulators' formulae.

Because of these constraints, small programs are often dropped. Larger projects then must go the tortuous Certificate-of-Need route, where countless staff hours and dollars must be devoted to the duplicative process of convincing federal and state agencies of the need for, and financial viability of, the project. And frequently these two agencies are not in agreement.

Regulation need not be all bad in that the analytical process required to prepare Certificates-of-Need focuses on determination of patient need, review of optional courses of action, and judgment as to the most desirable allocation of resources. This has brought a greater measure of objectivity to operating and capital decisions, and many hospitals have indeed been able to strengthen their internal procedures as a result of regulatory analysis.

---

MALCOLM D. CRAWFORD is the executive vice president for finance and administration at Danbury Hospital. A graduate of Princeton University with a master's in business administration from New York University, Mr. Crawford is chairman of the Connecticut Hospital Association's Committee on Accounting and a member of its Council of Finance.

In addition to the visible impact of regulation on current hospital operations and on the formation and preservation of capital, there are two more insidious affects. The regulatory process has resulted in a tremendous diversion of time and skills of physicians and hospital staff. Time and effort that might otherwise go to improving the delivery of health care is eaten up in non-productive exercises.

And because of the financial squeeze, hospitals generally do not have the resources to search for new ways to prevent, diagnose and treat disease. Regulatory formulae and "caps" do not accomodate such programs, and many hospitals cannot risk the financial consequences of failure.

Many of these criticisms of government regulation were addressed during the most recent session of the state General Assembly, and measures were taken to correct some of the more noticeable excesses, in particular with regard to the structure and powers of the state Commission on Hospitals and Health Care (CHHC).

Hospital officials are extremely hopeful that given half a chance these measures may indeed refine and improve the regulatory process so that no longer will the end result have to be the sacrifice of the long-term viability of hospitals—and the effective delivery of health care—to short-term expediency.

---

# Interesting Times

## JAMES S. TODD, M.D.

Selecting a subject for this evening provided some interesting possibilities, but it soon occurred to me that we were living in interesting times, not unique times, but interesting times. Times were scientists now study less our origins, and more what our finish is to be, where childhood begins with youngsters asking where they came from, and ends with them refusing to tell anyone where they are going, and times where government intervention makes it possible for us to have diseases we couldn't otherwise afford, and yes times where division and dissent exceed agreement and cooperation.

There is an old Chinese curse that says "May you live in interesting times". Even a quick look at our contemporary society confirms the wisdom of that curse. Well every generation of Americans has faced interesting times and their challenges, but what makes the present situation so difficult is that the challenges are not clearly defined. In times of war, its easy to know who your enemies are. In a great depression like the thirties it is pretty easy to know you are bankrupt. But what we have now is much harder to deal with, we have problems like balloons, you can't get a handle on them. Energy crises that come and go without warning or explanation, not a real depression but an economic zig-zag no one really understands, not a political catastrophe but certainly a lack of confidence in our leaders. Not a war but a sense we are not in control of our own destiny, indeed we are not quite sure who is.

It is not that we have lacked challenges in our interesting times, its just we are not entirely sure what they've been and who's been responsible for them. So, seeing no clear pattern to our existence, Americans have concentrated on self development. Fortunes have been made on books telling us "How To Be Our Own Best Friend", "How to Look Out For Number One," "How To Improve Our Bodies", and even "How To Find Our Own Erroneous Zones". The bottom line has become a worship of individualism be it singly or in groups. As a result our tradition of pluralism is under

---

JAMES S. TODD, M. D. Trustee, American Medical Association. This address was delivered at the Connecticut State Medical Society's Annual Meeting of the House of Delegates on April 29, 1981. Dr. Todd is a general surgeon, practicing in Ridgewood, New Jersey.

strain with each group, each person, pushing for themselves. For generations we have cherished diversity by encouraging the growth of different groups, of different individuals economic, ethnic, occupational, religious, and professional. All free to express themselves, and all trying to establish their own rules for the game. Yet now we begin to see the dangers for America is no longer so diverse as it is split assunder into innumerable special interest groups each trying to maintain its own concept of individuality, all conscious of their rights, and all increasingly sensitive to any infringements by others.

When individual groups push against one another for advantage the sense of trust in established institutions quickly declines and the points of conflict and friction quickly multiply. As the arbiter of social conflict, the government is called upon evermore frequently to protect the interest of one group, promote the interest of another, or simply resolve the growing number of conflicts. As the demands of individuals increase, fewer of them can ever emerge fully satisfied by the results. Frustrations multiply, further pressures are applied, positions become fixed and uncompromising. With so many groups and individuals vigorously trying to promote their special interest, the politics of activism become the policies of immobility. Unable to satisfy anyone, solutions are delayed or compromised and we drift unable effectively to deal with energy, inflation, the environment, or indeed any problems of national magnitude. The alternatives in such a society are limited, and unfortunately usually defaulted to the government whose only response is regulatory, and that option is now sadly overburdened as well as not very likely to succeed.

The real crisis is one of adapting to a world where there are no simple solutions to our problems. Our system works best when there are unlimited resources, and everybody gets something. Now we are told our resources are finite and there must be some tough decisions made if we are to balance needs and resources, to do this will require the courage to look beyond one's own private welfare, or the welfare of one's professional group, and to think in terms that are moral and humane. Sadly it is time we faced realistically the issues of the allocation of scarce resources, welfare, technology, government reaching into every facet of our lives, each time further dimishing our freedoms. Like it or not, we will be forced to make these decisions, and hopefully it will be done by ranking those things we really care about, family, work, country, establishing priorities and allocating resources to fulfill those priorities. What we are talking about are new commitments, a commitment to the proposition that while all are not necessarily equal, none should prosper at the expense of others. A commitment to use individual resources and talents prudently and charitably. Nowhere else is this commitment more important than in the health care field. Having been taught to do everything possible for everyone with whom they come in contact and having thereby developed the finest health care system in the world, physicians are incredulous when they face increasingly severe criticism from all sides.

Nonetheless perhaps some of this criticism may be justified because until very recently physicians have ignored cost and priorities in the development of the health care field. Health is already one of the most heavily subsidized industries in this country. Health care utilizes ten percent of the entire federal budget and nine percent of the gross national product. It is little wonder that the public and the government are increasingly interested in how these resources are spent and will continue to gain control over them. Three things should be self evident; First we cannot do everything scientifically possible for everybody everywhere all the time, second, we must or someone must, decide what we are going to do for whom and when and third we must recognize that health care is only one of the determinants of good health.

Ivan Illich in a recent social blast called *Medical Nemesis* reaches the startling conclusion that the medical establishment has become a major threat to health. He sees that society has transferred to physicians the exclusive right to determine what constitutes sickness, who is or might become sick, and what shall be done to such people. This, he maintains, has resulted in rituals for example of the yearly but probably unnecessary physical exam, the long term maintenance of the hopelessly ill, and the medicating of any and all conditions, and the production of medicine as a commodity which if only extended far enough should assure good health. It is this medicalization of society which ends up spending thirty percent of the budget on ten percent of the people, increases the use of tranquilizers ten times that of alcohol, and in the end deprives the citizen of his ability to understand or determine his own medical future, not infrequently forcing courts to make medical decisions. Illich concludes by saying "The level of public health corresponds to the degree to which the means of responsibility for coping with illness are distributed among the total population. This ability to cope can be enhanced but never replaced by medical intervention. The society which can reduce professional intervention to the minimum will provide the best conditions for health".

Think about that for a moment, for as we study more and more about less and less it won't be too long before no one in this country will be pronounced totally healthy. Perhaps we have been too successful in the development of medical technology. Should we for example marvel over the transplantation over a heart, when children in the inner cities are still dying of diseases for which they could have been immunized. It would be reassuring to assume that technology is impersonal in development and therefore justified at all levels. But like it or not, every new program and development reflects and influences values, ideas, theories, and beliefs. As medical sciences have advanced, the related social and ethical issues have been multiplied far beyond expectation. Inescapable then is the conclusion that physicians and hospitals can no longer function independently from society as much as we might like to think a science should.

Until very recently health care has been a pure monopoly, and still is in the eyes of some. Now the public has chosen to license and utilize allied health professionals, chiropractors, optometrists, podiatrists, psychologists, and others. Ignoring or trying to reject them is no longer feasible or legally possible. It must be remembered that the health profession exists for a purpose, and increasingly that purpose is going to be defined by the public. There is a clear distinction between a profession and function. The function of health care is eternal, but the profession is temporal and must perform its work within the constraints set by those who commission its work or conflict will be inevitable.

And so here we are pressed on the one hand by limited resources and on the other hand attacked by all those groups who feel they are being deprived or ignored. So what does all this mean? Euripides said the success of prediction came through being a good guesser and none of us have a corner on that market, but I do see three areas of critical importance if physicians and hospitals are to survive and prosper in our changing society.

First there is going to have to be a change in attitude of the profession toward the public and that of the public toward the profession. The medical profession is no longer perceived as the sole guardian of the public health, a sobering but inescapable conclusion. The issue is not shall we share our responsibilities. Public policy has already decided we should, the real issue is how can we share them without losing our preeminence as a profession and without harm to those we serve. The all prevading paternalism of the past is no longer appropriate to the contemporary scene. The American public has the right to go to hell medically if they choose. We don't have to help them, we can continue to point out the dangers of utilizing ill-prepared practitioners or charlatons, but do we serve any useful purpose in diverting resources and energies to paternalistic activities which fail time after time. We are quick to point out deficiencies in others, and fuss about unscientific practices, yet ignore how many things we do that would be hard pressed to stand the scrutiny of the scientific method. As a result we are going to be exposed to an increasing array of alternative health professionals, and if we are prudent we will develop mechanisms to accomodate them, recognizing that they do have legally protected rights and prerogatives and may even have some value.

Now that the learned professions are no longer exempt from the Sherman Antitrust laws, physicians will have to be more tolerant of practices previously defined by us as unprofessional. Whereas fraud should be exposed, the public should have ready access to relevant information which will enable them to make intelligent health care decisions both as to person and procedure. Consequently, what we now consider as unprofessional advertising will become increasing common and probably quite irksome, albeit not all bad. In short we will be exposed to many new health professionals and practices with which some measure of accomodation will be required.

Second, acknowledging some limitation of resources, the future will increasingly require greater selectivity in programs, theories and their distribution. The day of being all things to all people is rapidly passing. Physicians have accepted the concept of specialization and so should hospitals and patient. In addition to basic facilities required for the care of patients hospitals will have to critically evaluate their staffs, patient mix, and surrounding facilities, reaching objective conclusions as to services that can and should be offered. It makes no sense for a hospital to develop or expand services which are already available and under-utilized in other nearby facilities. Unpalatable as it may be, hospitals and medical staffs will have to cease being tight little islands. Cooperative ventures including personnel sharing, central purchasing, regionalized services can and probably will be developed. Boards of Trustees and medical staffs from several institutions may well find the need to meet jointly while planning allocation and expansion of services. Joint decisions regarding provision or lack of provision of esoteric services, full service, chronic care services, speciality services only, screening provisions, ambulatory care units, free-standing surgical units, and even physician office facilities could go a long way toward reducing unnecessary duplications.

As a result, independence will inevitably diminish but expertise, efficiency, and economy, to say nothing of better care may be achieved. Public reaction to such changes will also require attention. Each community will have pride in its institutions, and will want the convenience of full service high quality, and creature comforts readily available. It won't work both ways: high technology is high cost! All of this will require careful coordination between community leaders, the media and the health profession. Hospitals, physicians, and communities of patients are going to find their relationships changing as technology changes.

And lastly, hospitals and physicians will need to understand and deal with government intervention far better than they have in the past. Given the current national situation, most rational legislators will admit there is little likelihood of any sweeping national health legislation in this Congress and maybe even in this decade. Equally certain, however, are further cutbacks in government spending in all areas of health, research, education and public assistance. Naturally the profession will have to take its share of these economic cutbacks, and limit their dissent to those areas which directly affect patient care. Clearly the profession will not be left alone, the bureauracracy will continue to grind out regulations all calculated to achieve further control over the health care system, not necessarily to make it better but rather to make it more uniform and controllable.

Ever present should be the realization however, that the goals of the regulators and those of the health professionals need not always be incompatible. Increasingly, the adversary system of regulation should give way to cooperative ventures. Regulators, misguided though they often seem to be, do have value, and if you doubt that think of the chaos that would result if, for example, the State Board of Medical Examiners or the Department of Health were to suddenly disappear.

As a corollary of this, though, is a certainty that on occasion the regulators are going to be dead wrong. Health care providers need to find ways to deal with that circumstance and promptly so. Logically, the solution will be unity of purpose, currently a very elusive concept. The bottom line always seems to be a parochial analysis, with little thought being given to the total benefit or detriment to the profession and/or society.

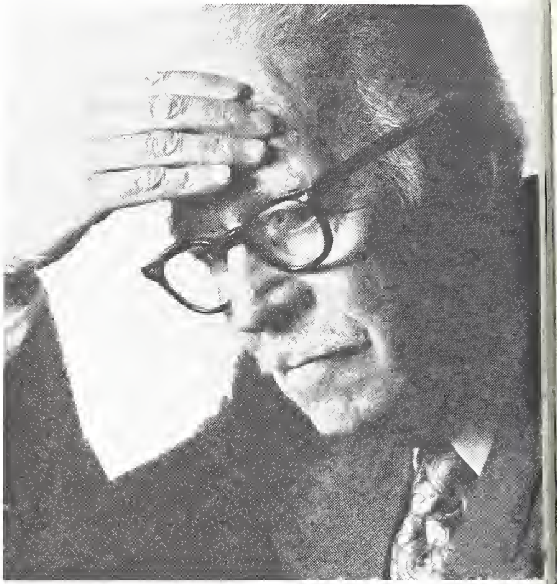
Accountability now seems to be the name of the game, and if the profession plans to have at the bureauracracy, it must be prepared to be pure in accountabilty. More importantly, it needs to be prepared to act in unison for the benefit of the people they serve no matter how distasteful the results may be.

To divide is to conquer, and the decade before us is going to require far greater cooperation and unity among those diverse elements of our system. Necessity makes for strange bed fellows, but realistically if the health care system is to fulfill its destiny, hospitals, physicians, and regulators need to get to know one another better, trust each other more, develop a resoluteness of purpose, and acknowledge that they exist not to serve their own purposes, but the needs of those they are suppose to serve.

All around us, things are changing, and not all for the worse. There are legitimate legal and societal demands which must be addressed in a responsive fashion, and which if ignored will be imposed upon us. The emerging great problem of our times is not how to produce change, but rather how to direct it so that it does not overwhelm us. The ultimate tragedy of American medicine may well be, that while quick to accept scientific change, it could not adapt to the social consequences of that change. Physicians and hospitals must respond to social reality by working with constantly changing concepts, changing institutions, and a constantly changing array of health professionals.

And so if I have any message at all for you it is that the challenge of interesting times is to recognize the opportunity to strengthen inner commitments, to believe that something inovative can and should be done about the problems that limit us, and to develop more fully that sense of restraint and responsibility that will allow technical progress ultimately to be translated into human progress. It does not mean we will succeed but it does oblige us to try.

A TOTALLY NEW
DELIVERY SYSTEM TO
**HELP REDUCE THE FEAR
OF ANGINAL
ATTACKS**



Round-the-clock
protection with

**ISO-BID**

(ISOSORBIDE DINITRATE)
40 mg. capsules ... twice-a-day dosage

**Controlled sustained release of ISO-BID's isosorbide dinitrate through micro-dialysis diffusion can help reduce frequency and intensity of anginal attacks. This in turn can minimize patient's fear of attacks, and dependence on nitroglycerin.**

Unlike ordinary sustained release products, ISO-BID releases isosorbide dinitrate at a smooth, continuous, predictable, controlled rate to provide for up to 12 hours of therapeutic activity. Micro-dialysis is dependent only upon the presence of fluid in the G.I. tract and not on pH or other variables. ISO-BID is particularly advantageous in the prevention of nocturnal angina.

DOSAGE: One ISO-BID capsule every 12 hours on an empty stomach according to need, for continuous 24-hour therapy. Some patients may require higher dosage levels. In these patients, dosage should be titrated, and they may require two ISO-BID capsules b.i.d. Not intended for sublingual use. Consult product brochure before prescribing.

**THERAPEUTIC FOOTNOTE:** IN TREATING ANGINA . . . FAILURES MAY RESULT FROM INADEQUATE DOSAGE
Reports in the literature indicate the usefulness of higher dosage levels of isosorbide dinitrate.[1,2]

**INDICATIONS:** Based on a review of this drug by the National Academy of Sciences — National Research Council and/or other information, FDA has classified the indications as follows:

**"Possibly" effective:** For the relief of angina pectoris (pain of coronary artery disease). ISO-BID is not intended to abort the acute anginal episode, but is widely regarded as useful in the prophylactic treatment of angina pectoris. Final classification of the less-than-effective indication requires further investigation.

**CONTRAINDICATION:** Idiosyncrasy to this drug.

**WARNINGS:** Data supporting the use of nitrites during the early days of the acute phase of myocardial infarction (the period during which clinical and laboratory findings are unstable) are insufficient to establish safety.

**PRECAUTIONS:** Use with caution in patients with glaucoma. Tolerance to this drug, and cross-tolerance to other nitrates and nitrites may occur.

**ADVERSE REACTIONS:** Cutaneous vasodilation with flushing. Headache may commonly occur, and may be both severe and persistent. Transient dizziness
and weakness, in addition to other signs of cer
bral ischemia associated with postural hypote
sion may occasionally be seen. ISO-BID can act
a physiological antagonist to norepinephrine, hi
tamine, acetylcholine and many other medication
An occasional patient may show marked sens
tivity to the hypotensive effects of nitrite; sever
responses (nausea, vomiting, weakness, restles
ness, pallor, excessive sweating and collapse) ca
occur, even with the usual therapeutic dosag
alcohol may enhance this effect. A drug rash and
or exfoliative dermatitis is occasionally seen.

SAMPLES AND LITERATURE AVAILABLE.

**GERIATRIC PHARMACEUTICAL CORP.** BOX 68. FLORAL PARK, NEW YORK 11001
PIONEERS IN GERIATRIC RESEARCH
DEVELOPERS AND SUPPLIERS OF CEVI-BID • GER-O-FOAM • B-C-BID

1. Shane, S.J.: Canadian Family Physician, November 1973. 2. Lemberg, L.: Practical Cardiology, February 1976.

# Current Medicolegal Issues

## THE CITATION

### N.H. Malpractice Act Unconstitutional

A statute intended to address the problems of the Medical Injury Reparations System in New Hampshire was unconstitutional and void in its entirety, the New Hampshire Supreme Court ruled.

The suit was brought by several persons who had filed claims against physicians. The plaintiffs argued that the statute was violative of the equal protection guarantees of the federal and state constitutions in that the statute distinguished victims of medical negligence from others and restricted the means by which they may sue and collect damages.

In finding for the plaintiffs, the court held that: (1) Although it was reasonable to require that expert witnesses be competent to render equivalent care, the requirement in the statute that the witness be an expert in the same field at the time the defendant rendered the alleged negligent care did not substantially further the objectives of the statute. (2) The legislature could not abolish the discovery rule with respect to any class of medical malpractice plaintiffs. Neither could the legislature deny protection to minors and mental incompetents who are injured by medical negligence. These provisions unfairly burdened and discriminated against medical malpractice plaintiffs and therefore denied them equal protection. (3) There was no reasonable justification for the special treatment afforded by the 60-day notice provision, because malpractice defendants received ample notice under the usual service of process requirements. (4) The three provisions that limited damage awards unreasonably discriminated in favor of health care defendants and placed undue burdens upon seriously injured malpractice plaintiffs, thus denying plaintiffs equal protection. (5) The regulation of attorney's fees solely in the area of medical malpractice would make such cases less attractive to attorneys, creating a potential impediment to injured persons' access to courts and counsel. By regulating attorney's fees for medical malpractice plaintiffs only and for no other plaintiffs, this statute denied equal protection, the court added.—*Carson v. Maurer,* 424 A.2d 825 (N.H. Sup.Ct., Dec. 31, 1980)

### Informed Consent Doctrine Not Applied In Suit For Eye Injury From Drug

The doctrine of informed consent did not apply to therapeutic treatment, a Pennsylvania appellate court ruled.

A patient was diagnosed as having rheumatoid arthritis. Her physician prescribed aspirin, Butazolidin and Indocin for the pain and swelling. Because those drugs caused gastrointestinal problems, the physician prescribed chloroquine in August 1958. The prescription was for one hundred 250 mg. tablets to be taken one tablet per day. The prescription was not refillable, but the patient got two pharmacies to continually refill the prescription. She took one tablet a day from 1959 to 1971 without the knowledge or consent of the physician. As a result of the prolonged use of the drug, retinopathy developed and the patient became partially blind. In a malpractice suit against the physician, a jury returned a verdict in favor of the physician.

On appeal the sole question to be decided was whether the physician was obligated to obtain the patient's informed consent to the drug treatment. The court stated that such informed consent was required prior to a surgical operation, but that requirement had not been extended to therapeutic treatment. Quoting from the trial court's opinion, the appellate court said that the "doctrine has never been extended to the type of malpractice action brought herein and this Court will not do so."

The appellate court noted that the patient had visited the physician only once between 1959 and 1971 and did not give him the opportunity to use his expertise in discovering any side-effects and controlling them. The court said that the proximate cause of her condition was her independent prolonged use of the drug and the pharmacies that supplied them.—*Malloy v. Shanahan,* 421 A.2d 803 (Pa.Super.Ct., Aug. 22, 1980)

---

*THE CITATION is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.*

### Court Should Not Have Ruled On Drug Safety

A trial court erred in taking upon itself the task of determining that a drug was safe and effective, a federal appellate court in New York ruled.

The manufacturer of Insulase (chlorpropamide) began selling its product without having a New Drug Application approved by the Food and Drug Administration. The manufacturer filed an action to enjoin FDA from instituting any regulatory action against it and to declare that Insulase was not a new drug under the Federal Food, Drug and Cosmetic Act.

The federal trial court ruled that where the active ingredient was the same as that in a product already approved by the FDA as safe and effective but the excipients differ, the product was not a new drug if the excipients were generally recognized to be safe.

The court itself resolved complex scientific issues as to whether Insulase had the same bioavailability as Diabinese and was thus safe and effective. The trial was a battle of scientific experts centered around private, unpublished bioavailability testing by the manufacturer. The government appealed from the court's decision that Insulase was not a new drug.

Reversing the decision, the federal appellate court said that the trial court had erred in making its decision. The trial court should have confined itself to whether Insulase was generally recognized as safe and effective by scientific experts based on material usage over a substantial period of time and on published scientific studies.

The appellate court said Insulase was a new drug requiring an approved NDA before marketing. It was not generally recognized among qualified experts as safe and effective, there was no published scientific literature to enable the experts to make the necessary determination, experts had sharp differences of opinion, and the 16,500,000 tablets sold did not represent use to a material extent or for any substantial period of time, the court said.—*Premo Pharmaceutical Laboratories, Inc. v. U.S.,* 629 F.2d 795 (C.A.2, N.Y., July 29, 1980)

---

### Family MD Not Liable For Acts Of Surgeon

A patient's family physician and a surgeon were not jointly liable for injuries suffered by the patient, an Indiana appellate court ruled.

The family physician recommended that the patient have surgery for a gallbladder condition. The surgeon performed the operation with the assistance of the family physician. During the operation a penrose drain was inserted in the patient's abdomen to expedite draining into the dressing. The drain was to be removed by the surgeon four or five days after the surgery.

### No Lack Of Informed Consent In Ankle Replacement Surgery

A physician did not fail to secure a patient's informed consent to a total ankle replacement, a Colorado appellate court ruled.

A patient fractured and dislocated his right ankle in March 1973. After the ankle healed, arthritis developed in the joint, causing pain, stiffness and swelling. His treating physician suggested an ankle fusion to eliminate the pain, but the patient wanted to consult a second physician. The second physician agreed that an ankle fusion might be necessary, but first suggested that a screw that had been placed in the ankle be removed. The removal relieved the pain temporarily, but in September 1974 the patient returned to the second physician because of severe pain.

During the September meeting, the physician discussed the possibility of an ankle fusion and mentioned that an artificial ankle was available. The patient agreed to undergo a total ankle replacement, but after the operation the ankle became infected and the artificial parts had to be removed. The infection could not be eliminated, and in July 1976, after four unsuccessful attempts at ankle fusion, the patient's right leg was amputated between the ankle and the knee.

In a malpractice action against the physician the patient claimed that he had failed to inform him about the specific risks associated with a total ankle replacement. The patient also contended that the physician misrepresented that amputation was not a possibility and that he had previously performed a total ankle replacement. A jury returned a verdict in favor of the physician, and the patient appealed.

Affirming the decision, the appellate court noted that the physician had testified that it was his custom and habit before performing knee and hip replacements to inform patients of the possibility of failure of the artificial parts and of infection. He stated that he believed that he had informed the patient of those risks in accordance with his custom and habit in similar situations.

The trial court properly instructed the jury on the disputed factual issue of whether the patient was informed of any risks, whether they were not informed of any substantial risks, and whether any failure to disclose conformed with community medical standards. The physician's testimony on his custom and habit in other cases was properly allowed to show that he acted in conformity with his practice.—*Bloskas v. Murray,* 618 P.2d 719 (Colo,Ct. of App., July 17, 1980; rehearing denied, Aug. 21, 1980; cert. granted, Colo.Sup.Ct., Oct. 27, 1980)

*THE CITATION, Vol. 42, No. 12/April 1, 1981*

# ANNUAL REPORTS

## OF THE CONNECTICUT STATE MEDICAL SOCIETY

## 1980 - 1981

**The 1981 Annual Meeting of the House of Delegates was held on April 29th. The following reports are published in this issue of *Connecticut Medicine:***

**Reports of the Council by Dr. Andrew J. Canzonetti, Chairman; the Treasurer, Dr. John J. Mendillo and the Secretary, Dr. Louis C. Backhus.**

## OFFICERS OF THE CONNECTICUT STATE MEDICAL SOCIETY

## 1980-1981

### OFFICERS

*President:* W. Raymond James, M.D., *Essex*
*President-Elect:* Andrew J. Canzonetti, M.D., *Waterbury*
*Vice-President:* Gioacchino Parrella, M.D., *Milford*
*Treasurer:* John J. Mendillo, M.D., *New Haven*
*Secretary:* Louis C. Backhus, M.D., *Waterbury*
*Speaker of the House of Delegates:*
  Joseph S. Sadowski, M.D., *Hartford*
*Vice-Speaker of the House of Delegates:*
  Edmund H. Hecklau, M.D., *Greenwich*
*Delegates and Alternate Delegates to AMA:*
  Orvan W. Hess, M.D., *North Haven* (D)
    Isadore H. Friedberg, M.D., *Newington* (A)
  Guy W. Van Syckle, M.D., *Danbury* (D)
    William A. Whalen, Jr., M.D., *Willimantic* (A)
  Frank K. Abbot, M.D., *Hartford* (D)
    Stewart J. Petrie, M.D., *Derby* (A)
*Councilor-At-Large:*
  Edward A. Kamens, M.D., *Fairfield*

### COUNCILORS AND ASSOCIATE COUNCILORS

| | |
|---|---|
| Fairfield: | John J. McGarry, M.D., *Darien* |
| | T. Peter Jameson, M.D., *Danbury* (A) |
| | James P. Orphanos, M.D., *Fairfield* (A) |
| Hartford: | Merrill B. Rubinow, M.D., *Manchester* |
| | Roger S. Beck, M.D., *Hartford* (A) |
| | Morris J. Seide, M.D., *Hartford* (A) |
| Litchfield: | Todd E. Anderson, M.D., *Torrington* |
| | John J. Barrett, M.D., *Torrington* (A) |
| Middlesex: | Herbert Magram, M.D., *Middletown* |
| | Benjamin M. Shenker, M.D., *Middletown (A)* |
| New Haven: | Jerome K. Freedman, M.D., *New Haven* |
| | Robert R. McDonnell, M.D., *New Haven* (A) |
| | Joseph C. Czarsty, M.D., *Oakville* (A) |
| New London: | Frederick C. Barrett, M.D., *Norwich* |
| | Jerome Bobruff, M.D., *New London* (A) |
| Tolland: | Norman A. Zlotsky, M.D., *Rockville* |
| | Victor G. Sonnen, M.D., *Enfield* (A) |
| Windham: | William A. Whalen, Jr., M.D., *Willimantic* |
| | David H. Bates, M.D., *Putnam* (A) |

---

## REPORT OF THE COUNCIL

ANDREW J. CANZONETTI, M.D., *Chairman*

The Council will have met five times since the semi-annual meeting of the House of Delegates last November. Detailed minutes of the December, February and March meetings have been received previously by all members of the House. The minutes of the April 2 meeting are being distributed with the Handbook. The minutes of the meeting scheduled for April 15 will be distributed to the delegates as soon as possible. This report is limited to a summary of the major matters considered by the Council and the actions taken thereon. At the conclusion of the report, as appendixes, there are published a series of items of business which are transmitted by the Council to the House for consideration and action. The number given to each of the appendixes is identical with the number of the related section of this report.

1. MATTERS REFERRED BY THE HOUSE OF DELEGATES 11/20/80

   (a) At its November meeting, the House of Delegates voted to refer the following resolutions to the Council for study and dispensation.

   (a) *Medical Eye Safety Checklist*
   "RESOLVED:

   That the House of Delegates of CSMS urge all State Legislators to pass a law requiring the completion of a Medical Eye Safety Checklist form for each patient having an eye examination by a non-medical practitioner, and require that the patient be advised to seek medical evaluation or treatment by a medical doctor when certain signs or symptoms are reported by the patient or observed by the examiner."

The matter was referred to the Committee on Legislation, which committee met with representatives of the CSMS Section on Ophthalmology. Following a report from Dr. Isadore Friedberg, Chairman of the committee and a report from Dr. Philip Shelton, a representative of the Section on Ophthalmology, the Council Voted to support HB 6884 "An Act Requiring The Recommendation to Physicians by Optometrists." A public hearing has been held on this bill and from the last report on the bill, it appears that the bill will not be sent to the floor for action.

(b) *Designated Compensation for Medical Mal-Occurrence*

"RESOLVED:

That the Connecticut State Medical immediately set up a steering committee to examine the concept of a Medical Accident Compensation Act with the view of preparing a sample bill for the State Legislature and organizing the political means for enactment."

This subject was referred to the Committee on Professional Liability and the author of the resolution appeared before the committee at one of its meetings. A subcommittee was appointed to research and study the concept and a final report has not been received.

2. MEDICAL STUDENT AND POST GRADUATE PHYSICIAN MEMBERS IN CSMS

At the November 1980 meeting of the House of Delegates, a series of Bylaw amendments were approved to provide for Medical Student and Postgraduate Membership in the Connecticut State Medical Society.

An Ad Hoc Committee on Membership was appointed by the Council to study ways and means to implement the provision of these Bylaw changes. The ad hoc committee has made the following recommendations, which have been approved by the Council:

(a) That dues for medical students be set at $20.00, of which $15.00 would be sent to the AMA to pay for membership in that organization. (If the medical student did not wish to be a member of the AMA, the $20.00 dues would remain with the Society.)

That dues for postgraduate physician members be set at $40.00, of which $35.00 would be sent to the AMA for membership in that organization. (If the postgraduate physician member did not wish to be a member of the AMA, the $40.00 would remain with the Society.)

In accordance with the CSMS Bylaws, the dues structure for these two categories of membership must be approved by the House of Delegates. (Appendix Item No. 2)

A recommendation by the ad hoc committee that every medical student in Connecticut, and Connecticut students attending colleges outside of Connecticut, upon his acceptance at medical school, be sent a letter of congratulation and an application for membership, was also approved by the Council. The Executive Director's office has already been carrying out most of the provisions of this recommendation for some time.

The ad hoc committee further reported that a joint meeting is planned with the Committee on Cooperation with the Medical Schools, medical student representatives from Yale and UConn and representatives of the postgraduate physicians to draw up some guidelines for the formation of formal organizations for these two categories of membership.

3. PUBLIC INFORMATION PROGRAM UPDATE

Dr. Michael Sharon, Chairman of the CSMS Committee on Public Relations has been keeping the Council informed as to the progress being made with this program. The committee has been meeting with members of the staff of Lowengard and Brotherhood and reviewing the proposals being made by L&B. The main thrust is the development of a statewide public opinion poll questionnaire to be mailed to a controlled group of persons. It is the opinion of L&B that the replies received from these questionnaires will provide them with the information necessary to develop a worthwhile public information program.

4. REPORT OF THE NOMINATING COMMITTEE

The Council, acting as the Society's Nominating Committee, has prepared and approved a slate of nominations for all offices and committee posts elected by the House of Delegates. The slate is published in this Handbook under "Report of the Nominating Committee" and the Council recommends its approval. (Appendix Item No. 4)

5. PROFESSIONAL LIABILITY PROGRAM

This subject is still one of the primary concerns of the Society and the Committee on Professional Liability is working long and tedious hours in studying alternate proposals. The March 2 Council meeting was devoted entirely to the subject of professional liability. Following a detailed report by Dr. Lawrence Ahrens, Chairman of the committee, it was VOTED "That CSMS have in place by October 1, 1981, a CSMS physician controlled mechanism to provide professional liability insurance to CSMS members". A bill has been introduced in the General Assembly, which is S.B. 228, "An Act Concerning the Incorporation of the Connecticut Medical Insurance Company". This bill has been reported out of committee and has received a joint favorable report. This bill is being scheduled for action on the floor of the General Assembly and we are optimistic about its passage.

At the April 2nd meeting of the Council, Dr. Ahrens and Mr. John Dorsett, the CSMS Consultant from American Health Systems, appeared before the Council to update the information on professional liability. The Council deferred action on a recommendation of the Committee on Professional Liability until a special meeting of the Council, which will be held on April 15. At this meeting, Dr. Ahrens and Mr. Dorsett were requested to bring in definitive proposals.

6. ANNUAL REPORTS OF STANDING COMMITTEES, REPRESENTATIVES AND ADVISORS

According to the Bylaws, "All standing committees, representatives and advisors shall, in advance of each annual meeting of the House of Delegates, submit to the Council in writing reports on all their activities during the past year. The Council shall transmit all such written reports to each annual meeting of the House of Delegates and shall direct the Speaker and/or Vice Speaker to make recommendations concerning the action required on each report."

The Council recommends that all the reports of committees, representatives and advisors published in the Handbook be accepted for information and that the recommendation contained in the report of the Committee on Medical Aspects of Sports that the membership on the committee be increased from 15 to 20 be approved. (Appendix Item No. 6)

A recommendation in the report of the Committee on Statewide Medical Planning that retired CSMS members be invited to organize themselves into one or more chapters to provide social benefits to themselves, and appropriate volunteer services to the Society and the public was referred back to the committee to develop the concept and report back to the Council.

7. FEDERAL TRADE COMMISSION

The AMA-CSMS-NHCMA motion for rehearing of the FTC appeal has been denied. In keeping with the past House of Delegates action on May 2, 1979, "to carry the appeal as far as needed to either achieve a successful conclusion or exhaust all avenues of redress", the Council VOTED to pursue a petition for a Supreme Court review of the Federal Trade Commission order, the cost of which will not exceed $5000.

8. REPORTS FROM PHYSICIANS SERVING ON STATE AND FEDERAL AGENCIES

The Council continues to keep abreast of what activities are being carried on by the various agencies through reports presented by CSMS Council members serving as repesentatives on these agencies and by the comprehensive reports prepared by CSMS staff. From these reports and the news from Washington, it appears that most health planning programs will be gradually phased out. Most of the reports about the Connecticut agencies indicated that they are already in financial difficulty.

9. RESOLUTION RE PSRO'S

Dr. Isadore Friedberg read a resolution concerning PSRO's to the Council, the resolves being as follows:

"RESOLVED:

That the AMA reconsider its previous action, and be it RESOLVED:

That the AMA recommend continued adequate funding of those PSRO's already receiving operational status".

It was VOTED that the resolution he referred to the House of Delegates for consideration.(Appendix Item No. 9)

10. LEGISLATION

The Committee on Legislation, the CSMS staff and lobbyist have been diligently following the legislative proposals affecting the practice of medicine through the legislative process and I am sure that Dr. Isadore Friedberg, Chairman of the committee, will bring the House up to date on some of the major issues.

11. CONCLUSION

As indicated in the opening paragraph, only matters that are thought to be of major importance have been included in this report. Members of the House are urged to peruse the complete minutes of the meetings held since the semi-annual meeting of the House of Delegates and the Chairman will answer questions about any of the items in this report or any items recorded in the minutes of the Council meetings.

At this time, the Chairman expresses his sincere appreciation and thanks to all the members of the Council and Staff, whose cooperation and assistance have been invaluable.

## REPORT OF THE TREASURER

JOHN J. MENDILLO, M.D.

The annual audited financial statements issued by Seward and Monde, Certified Public Accounts, are largely self-explanatory and are published herewith as the report of the Treasurer.

Following is a brief commentary on the report. The Society's budgeted expenditures for 1980 was $701,468 and anticipated income was $730,600. Actual income from dues was $12,218 less than the amount budgeted. This decrease was due to losses of membership dues primarily through deaths and exemption from dues for Life Members. Actual Journal income was $12,554 less than the amount budgeted, generally due to a decrease in advertising income. However, there was an extraordinary increase in income from the management of the Society's cash flow. Estimated income from this source was $35,000. but the actual income received was $79,210. or $44,210. more than anticipated. The Society's own internal accountant is to be commended for this accomplishment; were it not for this achievement, the Society's financial report would have been quite different. The net income for the year 1980 was $150,215. of which $99,286. is earmarked for the Public Information Program. Of the $102,500. budgeted for this program in the 1980 budget, only $2,674. of expenditures were incurred in 1980. As of December 31, 1980, the investment portfolio of the Society's General Fund had a market value of $215,511, as compared to a book value of $175,641.

In view of the inflation affecting the economy, the financial report is quite an accomplishment and reflects prudent management of the Society's funds.

Seward and Monde
Certified Public Accountants

The Connecticut State Medical Society
New Haven, Connecticut

We have examined the balance sheet of The Connecticut State Medical Society as of December 31, 1980 and the related statement of income and fund balance, general fund and the statement of special fund balances for the year then ended. Our examination was made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the financial position of The Connecticut State Medical Society at December 31, 1980 and the results of its operations for the year then ended in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Seward and Monde

March 11, 1981

---

## REPORT OF THE SECRETARY

LOUIS C. BACKHUS, M.D.

The statistical membership report for 1980 indicates an increase of 277, which offset by transfers, deaths, resignations, left a net increase of 68 members. Although we took in 23 more members in 1980 than in 1979, the losses were also greater. We regret to report losses from the death of members went from 40 to 69. We have reached a new plateau, we have attained the 5000 mark in membership; the exact figure being 5014.

According to AMA records, there are 2640 AMA members in Connecticut, of which 1954 are dues paying members, the balance being exempt either for disability, age, etc. The net gain in dues paying members in 1980 was only 2. For many years, we have been stressing the importance of membership at all levels of organized medicine. If each AMA member would undertake the assignment of encouraging one physician to joining the AMA, we could reach the 100% membership goal. Let's do it.

---

## MEMBERSHIP REPORT OF THE SECRETARY

### FAIRFIELD COUNTY

| | | |
|---|---|---|
| Membership - January 1, 1980 | | 1371 |
| New Members | 62 | |
| Less: | | |
| Deaths | 9 | |
| Resignations | 13 | |
| Transfers | 4 | |
| Non-payment of dues | 12 | |
| | 38 | |
| NET GAIN | | 24 |
| Membership - December 31, 1980 | | 1395 |

### HARTFORD COUNTY

| | | |
|---|---|---|
| Membership County - January 1, 1980 | | 1500 |
| New Members | 74 | |
| Less: | | |
| Deaths | 23 | |
| Resignations | 30 | |
| Transfers | 3 | |
| Non-payment of dues | 21 | |
| | 77 | |
| NET LOSS | | 3 |
| Membership-December 31, 1980 | | 1497 |

### LITCHFIELD COUNTY

| | | |
|---|---|---|
| Membership-January 1, 1980 | | 191 |
| New Members | 17 | |
| Less: | | |
| Deaths | 4 | |
| Resignations | 2 | |
| Transfers | 2 | |
| Non-payment of dues | 0 | |
| | 8 | |
| NET GAIN | | 9 |
| Membership-December 31, 1980 | | 200 |

### MIDDLESEX COUNTY

| | | |
|---|---|---|
| Membership - January 1, 1980 | | 190 |
| New Members | 7 | |
| Less: | | |
| Deaths | 1 | |
| Resignations | 3 | |
| Transfers | 4 | |
| Non-payment of dues | 1 | |
| | 9 | |
| NET LOSS. | | 2 |
| Membership - December 31, 1980 | | 199 |

### NEW HAVEN COUNTY

| | | |
|---|---|---|
| Membership-January 1, 1980 | | 1250 |
| New Members | 94 | |
| Less: | | |
| Deaths | 24 | |
| Resignations | 17 | |
| Transfers | 1 | |
| Non-payment of dues | 13 | |
| | 55 | |
| NET GAIN | | 39 |
| Membership-December 31, 1980 | | 1289 |

### NEW LONDON COUNTY

| | | |
|---|---|---|
| Membership-January 1, 1980 | | 275 |
| New Members | 11 | |
| Less: | | |
| Deaths | 6 | |
| Resignations | 3 | |
| Transfers | 0 | |
| Non-payment of dues | 2 | |
| | 11 | |
| NET LOSS | | 0 |
| Membership-December 31, 1980 | | 275 |

### TOLLAND COUNTY

| | | |
|---|---|---|
| Membership-January 1, 1980 | | 52 |
| New Members | 4 | |
| Less: | | |
| Deaths | 1 | |
| Resignations | 1 | |
| Transfers | 1 | |
| Non-payment of dues | 3 | |
| | 6 | |
| NET LOSS | | 2 |
| Membership-December 31, 1980 | | 50 |

### WINDHAM COUNTY

| | | |
|---|---|---|
| Membership-January 1, 1980 | | 117 |
| New Members | 8 | |
| Less: | | |
| Deaths | 1 | |
| Resignations | 2 | |
| Transfers | 0 | |
| Non-payment of dues | 2 | |
| | 5 | |
| NET GAIN | | 3 |
| Membership-December 31, 1980 | | 120 |

| | | |
|---|---|---|
| ASSOCIATE MEMBERS | 7 | |
| New Members | 0 | |
| Less Deaths | 0 | |
| Associate Members-December 31, 1980 | 7 | |
| TOTAL SOCIETY MEMBERSHIP-January 1, 1980 | | 4946 |
| New Members | | 277 |
| | | 5223 |
| Less: | | |
| Deaths | 69 | |
| Resignations | 71 | |
| Transfers | 15 | |
| Non-payment of dues | 54 | 209 |
| TOTAL SOCIETY MEMBERSHIP-December 31, 1980 | | 5014 |
| NET GAIN FOR YEAR | | 68 |

### TOTALS

| | |
|---|---|
| Fairfield | 1395 |
| Hartford | 1497 |
| Litchfield | 200 |
| Middlesex | 188 |
| New Haven | 1289 |
| New London | 275 |
| Tolland | 50 |
| Windham | 120 |
| | 5014 |
| Associate Members | 7 |
| | 5021 |

# Month in Washington

The Reagan Administration has won hands-down its five month budget campaign in the Congress. Some mop-up operations with an occasional skirmish here and there is all that remains in carrying out the President's promise to reduce federal spending.

The budget reconciliation triumph in the Democratically-controlled House of a bill backed by the Administration nailed down a successful outcome in Congress for the President's economy program to reduce federal expenditures next fiscal year by more than $38 billion. The 217-211 vote also made clear that the House is controlled effectively on major issues by a coalition of Republicans and conservative Democrats. The major impact on health will be a $1 billion slash in federal Medicaid outlays and a $1 billion cut in spending in 26 categorical grant health programs.

The only setback in the House was the decision not to press for a vote on a Republican substitute plan for the budget package approved by the Democrats on the House Commerce Committee. Although the Democratic plan met the health budget targets set by the Administration, it took a different road and did not remove some of the programs the Administration wants to phase-out such as Professional Standards Review Organizations (PSROs) and Health Planning.

The substitute plan prepared by Rep. James Broyhill (R-N.C.), ranking Republican on the Commerce Committee, would have ended these programs and hewed strictly to the Administration's original block grant and Medicaid proposals.

The health budget measures weren't included in the overall successful budget proposal authored by Reps. Phil Gramm (D-Texas) and Delbert Latta (R-Ohio) because the Republicans on the Commerce Committee had been assured earlier by the Democratic leadership that they would have an opportunity on the House floor to seek a vote on their plan, since the Commerce Committee had deadlocked 21 to 21 on the Democratic plan.

With 29 Democrats breaking ranks, the Gramm-Latta measure prevailed by a six-vote margin over the budget bill prepared by the House committees with the exception of the set-aside Commerce Committee bill.

Broyhill decided apparently that there was danger of losing a handful of votes (only a switch of four votes would be fatal) and announced that he was withdrawing his substitute. He told the House that Commerce Committee Chairman John Dingell (D-Mi.) promised that "he wants to work with us to resolve whatever differences that we have between our versions as we go into conferences."

****

The Senate has concluded hearings on the emotion-laden issue of when human life begins.

The American Medical Association opposed the legislation that declares human life shall be deemed to exist from conception.

"The practical effects of the proposed legislation are staggering," said Joseph Boyle, M.D., AMA Board chairman. Dr. Boyle told the Senate Judiciary Subcommittee that "passage of this bill would have an adverse impact on critical physician-patient relationships and would create endless medical, ethical and legal difficulties for the people of this nation."

Physicians could face serious dilemmas in advising pregnant patients, Dr. Boyle said. Under the bill, he noted, the physician would be responsible for the welfare of every fetus whose legal and health interest would, in the eyes of the law, be equal to, but may be in conflict with those of the woman."

Dr. Boyle listed some of the life-endangering conditions of pregnancy that physicians are presented with, and said the bill does not address these physician dilemmas or provide answers to physicians who must deal on a daily basis with these critical situations."

Effective medical intervention in these life-threatening situations would be prohibited under the measure, he said.

The issues raised by the bill go far beyond the realm of medical science and into social, religious, philosophical, ethical and moral concerns, the witness said. "The issue is unsolvable solely from a medical and scientific view."

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

"In sum," concluded Dr. Boyle, "we see no end to the negative medical, legal, social, ethical, and moral repercussions of a national policy that declares that human life begins at the time of conception."

The bill in effect would allow the states to prohibit abortion for any reason. Anti-abortion advocates also have been pushing a Constitutional amendment that would achieve the same purpose. The outlook for either approach getting through Congress this year appears dim. To date, the law-makers have concentrated their efforts on limiting the use of Medicaid funds for abortions.

****

Restricting freedom of choice for Medicaid beneficiaries would have a "devastating result" on the poor, the AMA has told Congress.

"A system under which Medicaid recipients have their freedom of choice restricted would result in an officially-sanctioned dual system of health care: one level of service for the poor, and a superior level of choice and options for everyone else," said Frederick Ackerman, M.D., Chairman of the AMA Council on Legislation.

The proposal was made by the Reagan Administration to accompany the five percent "cap" on federal Medicaid expenditures next fiscal year.

Testifying before the House Commerce Subcommittee on Health, Dr. Ackerman said the AMA endorses the concept of a cap "as part of the President's program for improving the overall economic situation. We believe that if there is to be a general reduction in funds for federal programs across the board, health programs should shoulder their share of the cuts."

Taking issue with the curb on freedom of choice, however, Dr. Ackerman said "the individual should have the opportunity to select and change at will the physicians who serve him, or be permitted to choose to enroll in prepaid medical care organizations, or choose to use services provided by a closed panel or group practice."

This freedom is "fundamental," the AMA official declared.

The plight of the poor "would be even further aggravated" by another Administration proposal to eliminate current reimbursement requirements in the Medicaid law, Dr. Ackerman said. If Medicaid beneficiaries should remain eligible for quality care, "then it is important for all providers to receive reasonable reimbursement," Dr. Ackerman said.

Dr. Ackerman noted that the AMA in supporting a Medicaid cap has not suggested any particular figure. He expressed concern about the Senate Finance Committee's decision to lower the federal minimum matching percentage from 50 percent to 40 percent. This proposal would primarily hit 12 states and the District of Columbia. "The AMA believes that reductions should be sought which treat all states in a fair and equitable manner," he said. "We believe that no state should be required to suffer cuts disproportionate to other states."

Achieving economies in Medicaid won't be easy, but states should be able to maintain essential services through greater efficiencies in administration and by elimination of fraud and abuse through vigorous enforcement of the law and judicious cutbacks where eligibility has become over-extended," Dr. Ackerman said.

****

The question of whether the federal government has the right to forbid professional associations such as the AMA from enforcing ethical restrictions against advertising will be decided by the Supreme Court.

In a brief order, the Court agreed to hear the AMA's appeal from the 1979 FTC ruling that barred the AMA from involving itself in physician advertising unless the advertising would be "false or deceptive" as defined by the FTC. After an Appeals Court by a 2 - 1 vote upheld the FTC last October, the AMA went to the Supreme Court, declaring the case is of "enormous importance" because it allows the government to "prevent professionals who have voluntarily associated together from taking a position against promotional practices which they believe to be deceptive."

As is customary, the high court gave no explanation for accepting the case for review. A hearing will be held this fall, following the summer recess. A decision won't be issued until later, probably next year.

The AMA said that if the FTC is upheld "the real loser will be the public, often the poor or unsophisticated, who are drawn to incompetent practitioners by the meaningless testimonials, inflated promises, non-verifiable claims of superiority and outright lies that the AMA's 1976 statement (on advertising and solicitation) had condemned."

The Supreme Court was asked to hear the case "before responsible medical societies . . . simply abdicate the field to a government agency (FTC, which itself acknowledges that it is incapable of drafting precise guidelines."

Joining the AMA in the appeal where the Connecticut State Medical Society and the New Haven County Medical Assn., both of which were named in the FTC's original 1975 complaint. The American Dental Assn. supported the AMA position and has agreed to abide by rules similar to those set out for the AMA.

# Reflections from the Dean's Office

## The Market Is Down

ROBERT U. MASSEY, M.D.

At graduation and other ceremonies which mark the passage of time, speakers often turn prophets and talk of the future, that time to come which is never objectively perceived until it turns into the past, leaving only traces to be examined at leisure, over and over again.

In his John C. Leonard Memorial Lecture given this year at the Hartford Hospital house staff graduation, Dr. C.H. William Ruhe, Senior Vice President of the Amercian Medical Association, spoke of the declining market for medical education, and described a future with more doctors, declining medical school enrollments, fewer applicants, higher tuition, faculties less involved in research and more dependent upon practice, and less federal support for both education and research. The market for medical education which had been growing since the 1940's has ceased to grow, and in fact has begun its decline. The future which we have spoken of and lived with for so long has almost overnight slipped into the past, and the plans of only two or three years ago are now ready to be worked over by the historians.

If they could predict these cycles of growth and rest, the planners would attract more converts. But has not a declining market been, if not the goal, at least the result of all our efforts? After all, the existence of any market implies an unmet need, and most activity is directed toward meeting needs, our own or someone else's. We expect to be successful, and if we are the number of unmet needs must diminish. Also, as more needs are met and paid for, less money remains to pay for wants and perceived needs.

The Medicare cap and the declining support for research are signs of that. Medical care, medical research, and medical education, or rather health professions education, may have taken their full share of the resources which society is prepared to give to them. We may wish to think of this as merely a temporary lull, but temporary lulls in history often last for decades.

We do not know whether a society determined as ours is by its technology and science can have lulls; perhaps only brief rests are possible. If all of human history could be laid out for us like a long tapestry, the future would be seen as a coherent extension of the past without seams and without surprises. The trouble is that we see only a small part of the tapestry, and that but briefly and generally from the rear. History is the despair of planners.

Osler found his answer for this in Carlyle's warning "not to see what lies dimly at a distance, but to do what lies clearly at hand", and then wrote *A Way of Life,* and spoke of day-tight compartments. Sir Thomas Browne, living through Civil War and Revolution, wrote to his son of the values to be found in the practice of medicine: "Times look troublesome, but you have an honest and peaceable profession to employ you, and discretion to guide your words and actions." Isaak Walton, living at the same time, found his peace in angling, declared by him "to be like the virtue of humility, which has a calmness of spirit, and a world of other blessings attending upon it."

The German romantics turned their backs on the Enlightenment and sought refuge in Nature, escaping from history and the idea of progress.

Fortunately in medicine we may be spared doubts about the reality and the value of the work to be done. Pain, depression, injury, and sickness abound, and though modified by history, must finally be managed by those skilled in clinical work and devoted to the task. Now that we know how to get answers from nature, the work of science will be, for all we know, endless. The toxic shock syndrome is a reminder that nature may be always a step or two ahead of us.

Dr. Ruhe's talk of declining markets was a suggestion that we might stop thinking about expansion, that we should consider quality more to the point than quantity. That may be hard after forty years of growing; it will take getting used to. We may think that we cannot care for the sick without having a larger share of the gross national product, or that we cannot do science without adding a new research wing. That comes from habits 40 or 400 years old; those habits seem likely to change, and it may be well to plan for that. In times like these, the amateurs may be as right as the experts, and that is a healthy state of affairs.

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# "You've got a suit, doctor, and it's not hearts or clubs."

Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

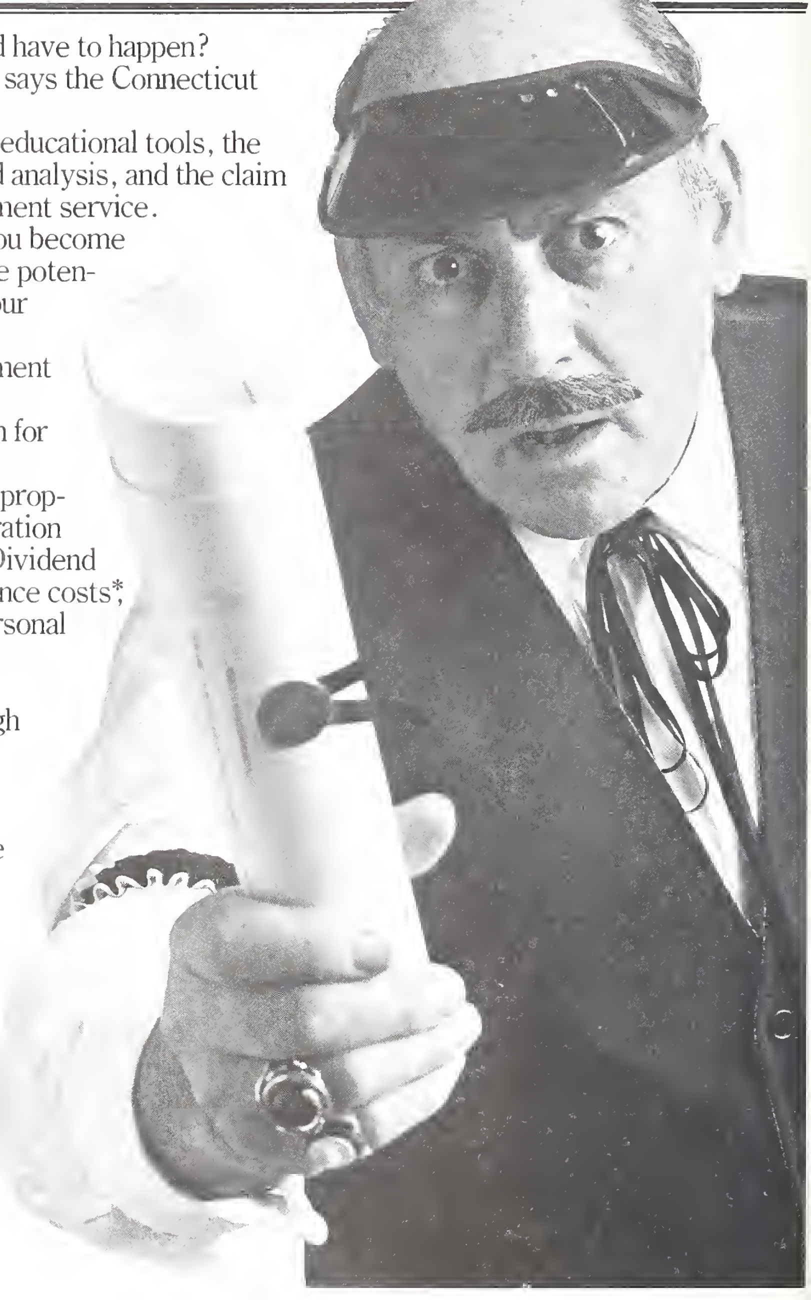
Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs*, 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.

Ætna
LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company



# Health Planning and Anti-Trust Law

JOSEPH M. HEALEY, J.D.

Central to the theory of comprehensive health planning is the concept of the allocation of health resources on a regional basis according to predetermined need. The National Health Planning and Resources Development Act of 1974[1] established an elaborate network of local and state agencies responsible for evaluating the health needs of the area involved, for developing a plan for future direction and an annual agenda for immediate action. Such plans were expected to provide a framework within which proposals for capital expenditures could be evaluated. By careful monitoring of health care expenditures to avoid increasing the cost of medical care by allowing wasteful duplication of existing services, comprehensive health planning was expected to become an essential tool in the fight against the rising costs of health care.

A major problem arises, however, when such attempts to control the allocation of health care resources are examined in light of our societal commitment to principals of anti-trust law. The cooperative spirit which encourages sharing resources on a regional basis without concern about the gain or loss of a competitive edge is potentially anti-competitive behavior prohibited by anti-trust laws. The refusal of a business entity to deal with a health care facility which fails to cooperate with regional health planning agencies resembles monopolistic control of access to an important health care services market prohibited by anti-trust laws. The inevitable collision between principles of comprehensive health planning and principles of anti-trust law occurred during the 1980 - 81 term of the United States Supreme Court in the *National Gerimedical Hospital* case[2] which will be the focus of this and next month's columns.

National Germedical Hospital and Gerontology Center, a private, acute care, hospital in Kansas City, Missouri opened in 1978. The hospital sought to enter a contract of participation with Blue Cross which would enable it to receive direct reimbursement of the full costs of the covered services it rendered to individual Blue Cross subscribers. All other acute care hospitals in the Blue Cross service area were participating members. Blue Cross refused to enter the contract of participation on the grounds that its policies prohibited participation by any new health facility which failed to demonstrate that it was meeting a clearly evident need in the service area. Blue Cross cited the failure of the hospital to obtain approval for construction from the local health systems agency (HSA). The announced policy of the HSA was to disapprove the addition of acute care beds in the area because of a surplus of existing beds. In light of this announced policy, the hospital did not bother to apply to the HSA and the Blue Cross refusal followed. The hospital filed suit in the federal district court alleging a conspiracy in restraint of trade, a continuing combination and conspiracy to boycott, and an unlawful abuse of monopoly power, all in violation of the Sherman Anti-Trust Act. The defendants, Blue Cross of Kansas and Blue Cross Association sought to have the complaint dismissed on the ground that the National Health Planning and Resources Development Act had impliedly repealed the anti-trust laws as applied to the conduct in question. The District Court, treating the motion as one for summary judgement, granted the defendant's request.[3] The United States Court of Appeals for the Eighth Circuit affirmed the District Court's decision[4] and the hospital appealed to the United States Supreme Court.

Justice Powell delivered the opinion for a unanimous Court. He identified as the critical question in the case whether the decision by a private non-profit organization (Blue Cross) to refuse to deal with a health care facility because of its failure to gain approval from the local health systems agency should be examined because of possible anti-trust violations. The Supreme Court's conclusion was that the refusal should be examined because of the failure of the defendants to establish their exemption from the operation of the anti-trust laws. The case was remanded to the District Court for trial. This conclusion of the Supreme Court does not represent any conclusion about the merits of the hospital's assertation that the anti-trust laws have been violated. It simply represents the Supreme Court's unwillingness to accept Blue Cross' claim that its refusal to deal with the hospital should not be reviewed in light of the anti-trust laws.

Next month, discussion of the case will continue with an examination of the Court's reasoning and the implications of the decision for the future of health care planning.

## REFERENCES

1. 42 U.S.C. 300K
2. *National Gerimedical Hospital and Gerontology Center vs. Blue Cross of Kansas City and Blue Cross Association*, 49 LW 4672 (1981)
3. 479, F. Supp. 1012 (1979)
4. 628, F. 2d 1050 (1980)

---

JOSEPH M. HEALEY, J.D., Assistant Professor of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, CT.

# Have you considered participation?

- The Century Contract Comprehensive Schedule of Services has been increased *three times* in 18 months.
- These increases, in the aggregate, have amounted to 51.6%.
- We will continue to update the Century Contract schedule annually.
- Participating Providers receive prompt payments directly from Blue Cross & Blue Shield.
- Your participation can reduce receivables and eliminate some billing steps.
- Over one million Connecticut residents are Century Contract members for whom claims totaling $82.5 million were paid in 1980.
- Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

**Blue Cross**
**Blue Shield**
of Connecticut

THE HEALTH CARING PEOPLE

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Provider, call our office or complete the form below and send it to:

Blue Cross & Blue Shield of Connecticut
Professional Relations Department
370 Bassett Road
North Haven, CT 06473

Telephone: 1-800-922-1742 or 265-8203

Name ____________________ Telephone ____________

Address ______________________________________

City ______________ State __________ Zip __________

CM781

**Connecticut Medicine**
*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editoral Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
James D. Kenney, *New Haven*
Ramon N. Kranwinkel, *Danbury*
Charles M. Krinsky, *New London*

John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Stewart J. Petrie, *Derby*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*

# EDITORIALS

## Women in Medicine

Women in medicine today find themselves at a cross-roads. They have four choices; 1) to follow an aggressive role and pattern themselves after their male colleagues. These women will eventually reach their goals, but in doing so, many of them will sacrifice their femininity and will refuse to consort with their female colleagues for fear that this will demean them in the eyes of their male colleagues; 2) to follow the traditional female role of wife and mother with a little medicine thrown in on the side. These women are reluctant to challenge the system and will not fight against any discrimination that they experience; 3) to maintain their femininity but at the same time press for equal status. These women will find it more difficult to progress in large medical centers but they persist and eventually reach their goals. The numbers of this group is increasing and this group is the one that does most to further the cause of women in medicine. Although most of them are supporters of the ERA, not all are ardent militants for this cause; 4) to do nothing because they are not sure where their commitment should be. These, along with group two will drop out of medicine in large numbers.

It has been a challenge for me to work on this issue focusing on women in medicine. I could not have done it without the help of three people. I wish to acknowledge Naomi Bluestone, M.D., who helped to decide the format of the issue, Fred Fabro, M.D., Editor, who came to me with the idea and was very patient when delays occurred and John P. Callan, M.D., who gave freely of his considerable editorial expertise.

Clair M. Callan, M.D.

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

## Ethics, the Press and Yale

The press has a rightful responsibility to elevate controversial issues into the public consciousness. However, reporting on an issue about which the public has every right to be informed does not give the press the license to distort, present errors of fact and convey a totally erroneous impression about patient care. Important issues should not be sensationalized so that the public is misinformed rather than informed. A recent series of articles in the *Hartford Courant* (June 14 - 18, 1981) about care received by newborns at the Yale-New Haven Medical Center is just such an example of distorted journalism. The title of this article, "Defective Newborns are Dying by Design," immediately conveys an impression that evil and sinister things are going on in Newborn Special Care Units The article contained bold statements that doctors "have helped parents give their defective infants lethal drug overdoses" or that doctors "would sign the death certificate no questions asked" or that infants are allowed to starve to death. These allegations are absurd and they are categorically denied.

Another distortion is that our field deals with failure rather than with success. During the past 20 years, neonatology has made astounding progress not only in medical technology but also in developing a climate of cooperation between pediatricians and obstetricians that had led to greatly improved infant survival. Twenty years ago mortality of infants weighing between 1000 and 1500 grams was over 50%. At our own institution, mortality in this weight group is now less than 14%. Twenty years ago infants weighing less than 1000 grams survived only rarely. Now over 50% of these infants survive and can look forward to a full productive life.

The successes of the past 20 years and the refinements of technology and support systems that are now available for newborns have brought a new set of problems. These relate to how this extensive technology and the extraordinary means of support that are now available should be utilized when the outlook for a particular infant is hopeless. This is an area of legitimate concern and it is an area where there is an increased need for public awareness. Even when physicians deal openly and honestly with families about these issues within the legal and ethical framework of our society, there is the potential that what is good medical care sensitively administered to patients and families can be distorted. It is distortion to imply that physicians are allowing a patient to starve to death when an unfortunate infant has too little bowel to permit normal nutrition and cannot be supported by parenteral means forever. It is a distortion to say that "hopelessly ill infants are given lethal overdoses" when they are given ordinary and standard levels of sedation to keep them comfortable. It is a distortion to imply that we are carrying out active euthanasia when we remove hopelessly ill newborns without any capacity for survival from a ventilator so that their mothers can hold them for the first time before they die. We are offended by these allegations; they offend not only us but they offend the entire medical profession. They erroneously interpret the most sensitive physician/patient relationships and imply sinister activities.

There is nothing within our legal, religious or ethical system which demands that we expend every technological effort in a hopeless situation. We have felt and continue to feel that technology should not be exploited for hopeless situations in such a way that life loses its dignity.

The practice of medicine is often not easy. Physicians and families are faced with difficult decisions. Several years ago, a family of an infant born with intestinal obstructions, major facial anomalies, absent genitalia and total extrophy of the bladder asked if we weren't "playing God" by even thinking about surgical repair of such an infant. The point is well taken. These issues are not easily conveyed and demand a thoughtful and sensitive presentation when they are discussed.

Having a sick newborn is a devastating experience for a family. The last thing that families faced with this kind of stress need is additional anxiety and distrust seeded by the kind of journalism as was in the *Hartford Courant.*

Joseph B. Warshaw, M.D.

*Professor, Pediatrics and Gynecology and Obstetrics,*
*Yale University School of Medicine*

## The Family—
## Present, Past and Future

The current vogue is to cite (or recite) divorce statistics and polemicize in asserting that the family is on the brink of disaster. We are told that one out of two marriages ends in divorce because the numbers of divorces per year is half the number of annual weddings. Actually the divorce rate has changed little in the last five years when it stood at about 5 per 1,000 as against 10 marriages per 1,000. Stated differently, two-thirds of marriages last indefinitely. More importantly, marriages get divorced, not families, although the over one million children and their parents and often a stepparent, deserve our concern and attention, if not special services.

But there are those in our political arena who profess to care about the traditional family, yet advocate policies more apt to weaken family life than to strengthen it. There are politicians—and ministers—who want to take the government—and the schools—out of family life, so that the individual and the family can attend to their affairs in whatever manner they choose. Taking the government out of these affairs is to be accomplished by reducing social services, by curbing support for education and by eliminating programs that might have the word "sex" in them—as if such programs produced the 1,000,000 teenage pregnancies in 1980, or substance abuse and even crime in the case of legal assistance to the poor.

What the "traditional" family is or was is not explained—and is difficult to know, but it is implied that it was good, solid in structure, loving and a place for probity and peace. If one explores the history of the family, one finds many similar periods of crises when the family was impugned as the source of social ills and upheaval—in Socratres' time, in Rome, in the Middle Ages, during the early decades of industrial development and urbanization as well as currently. Is the traditional family that, when neither state nor church had an official role sanctioning or licensing marriage (i.e., prior to the 18th century and when marriage ceremonies were inter-familial affairs for those who could afford feasts) or is it what Hogarth showed us in etchings like "Gin Alley" (recently shown in the AMA journal)? Is it the family that came about through arranged marriages, designed to perpetuate and enhance the affluence and political power of some families?

We would not in 1981 use a row boat to cross a stream every day on our way to work. We would not use drums to communicate over long distances, nor would anybody want to have a stone removed from the abdominal cavity without anesthesia and sterile precaution. But the family is expected and even admonished to live as if it were the past—without information on how to regulate reproduction, without children finding out that the Bible is an historical document written by men who did not know what mankind has learned since the Dark Ages. Much of our accumulated knowledge is beyond the ken of any of us to teach, hence we established schools so that "specialists" in different fields of learning can supplement what can be taught in the family.

One area in which families—Western families at least—have been notoriously deficient has been sex and family life education. There are many reasons for that which cannot be considered here, but understanding the difficulties does not necessarily resolve them, and the remedy has to be provided through teaching outside the family. If a family can live up to its responsibility in this area, the redundancy can do no harm. If, however, the teaching inside and outside the family is different, then there may arise conflict and confusion. The nature of such conflicts, however, is often like that between the church and Galileo, but resolution of conflicting beliefs, even facts, is part of life. A free society must prepare children to make choices.

The late 20th century family is different from the last century's because society has changed, and both will continue to change, changes that will be sought by some and resisted by others. Although change and attendant conflict have characterized human existence, the pace of change has accelerated tremendously. Thus it is even more difficult for parents to feel certain that their values and knowledge will be valid for the next generation, which may confront issues and problems which we cannot even imagine. Our children have to learn and know more than we do if they are to make wholesome decisions for themselves, their families and their communities.

Withholding information, especially about such basic and important issues as sex, reproduction and parenthood responsibilities, not to mention misinforming in these respects, can only result in avoiding choices or making uninformed ones. Some years ago a *New Yorker* cartoon showed a couple of Russians standing before a Fifth Avenue Christmas display and one said to the other, "Choice, choice, choice! It makes me sick." Physicians have a responsibility to prevent choice making us sick, and to oppose information restriction about vital matters affecting the health and welfare of children, of families and of future citizens.

*Stephen Fleck, M.D.*

# IN MEMORIAM

**FORCE, BERWYN R.,** New York Medical College, 1942. Dr. Force was an internist in the New London area since 1952. During World War II he served in the U.S. Navy from 1942 to 1951. He held memberships in the American Academy of Family Practice and the American Academy of General Practitioners. He was also a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Force died June 28, 1981, at the age of 64.

**O'CONNELL, JOHN D.,** Harvard Medical School, 1939. Dr. O'Connell was a ophthalmologist in the Hartford area since 1941 until his retirement in 1980. He was former president of the staff of St. Francis Hospital and Medical Center and also served on the staffs at Hartford Hospital and Mount Sinai Hospital. Dr. O'Connell died May 14, 1981, at the age of 68.

**STARR, RICHARD M.,** Yale Medical School, 1926. Dr. Starr was a internist in the New London area since 1926 until his retirement in 1972. He became staff physician at Lawrence and Memorial Hospitals in 1930 and was appointed chief attending physician in 1954, serving until 1965. Dr. Starr was a lieutenant in the Connecticut National Guard from 1935 to 1938 and served as New London's chief examiner for Selective Service during World War II. He was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Starr died May 8, 1981, at the age of 85.

## SPECIAL NOTICES

Nathan Pritikin
speaking on
Nutritional Relationship to
Degenerative Diseases
Thursday, September 17, 1981
Vallee's Steak House, Hartford, Conn.
Doctor's $65.00 Accompanying Spouse/Auxiliary $40.00
Co-Sponsored by
Alpha Omega Dental Fraternity
Connecticut Academy of General Dentistry
For further information contact:

Dr. Michael A. Wernick
170 Main Street
East Hartford, CT 06115

or

Dr. Nathan Marcus
Vernon Professional Building
Vernon, CT 06066

# AYR INSURANCE AGENCY

JANIS AYR ESPOSITO ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

---

# ELMCREST

**A COMPREHENSIVE**
**MENTAL HEALTH TREATMENT CENTER**
**FOR ADULTS AND ADOLESCENTS**

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Allen Cohen,** M.P.H., M.S.W.
*Administrator*

**Louis B. Fierman,** M.D., F.A.P.A.
*Medical Director*
**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
☐ GERIATRIC GUIDANCE CENTER
☐ DAY HOSPITAL

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## COUNCIL MEETING

Thursday, June 25, 1981
160 St. Ronan Street, New Haven, CT

### Attendance

Present were: Drs. Canzonetti, Parrella, Doctor, Backhus, Mendillo, Sadowski, Hecklau, James, Hess, Friedberg, Van Syckle, Abbot, Petrie, Rubinow, Anderson, Ragusa, Orphanos, Seide, Kaess, Shenker, McDonnell, Czarsty, Bobruff, Sonnen, Hayes, Fabro and Callan.

Also present: Dean Massey, Mr. Tomat (FCMA), Mr. Norbeck, Mrs. Lindquist, Mr. Brunell, Mr. Sweeney and Mr. Fiorentino.

Absent were: Drs. Jameson, Whalen, Jr., Freedman, Barrett, Zlotsky and Beck.

### Approval of Minutes

It was VOTED to approve of the minutes of the meetings of May 20, 1981, and June 15, 1981, as published and distributed.

### Health Planning in Connecticut and CME Report on CSMS-CME Resolution

a) After discussion the following motions were voted:

It was VOTED to have the Committee on Statewide Medical Planning obtain relevant health planning information from other CSMS committees and the AMA and for it to establish some type of rapport with the Governor's Task Force.

It was VOTED to reaffirm the Council's earlier instructions to the Committee on Statewide Medical Planning to investigate possibly needed alternatives to the state's current health planning system.

It was VOTED further that prior to any meeting with the Connecticut Hospital Association, the Committee on Statewide Medical Planning should have developed and shaped the role of CSMS in the area of health planning in Connecticut, and secured approval for same from the Council.

b) Jerome K. Freedman's report on the CSMS resolution on continuing medical education which passed the AMA House of Delegates was received for information.

### Resignations

The resignations of Drs. Herbert Magram (Chairman, Committee on Hospitals), Charles H. Robinson (Liaison Committee with the Department of Income Maintenance), Jeffrey S. Blau (Committee on Third Party Payments) and Robert M. Stark (Committee on Emergency Medical Services) were accepted with regret and thanks for their service to CSMS.

It was VOTED to recommend Edward A. Kamens, M.D., to the President as the new Chairman of the Committee on Hospitals.

### Suggested Dates for 1981 Semi-Annual Meeting and 1982 Annual Meeting

It was VOTED to hold the 1981 Semi-Annual Meeting on Wednesday, November 18, at the North Haven Ramada Inn and the 1982 Annual Meeting on May 26 and 27, at the Parkview Hotel in Hartford.

### Report on AMA Convention

Orvan W. Hess, M.D., spoke briefly on the recently concluded AMA Convention and referred the Council to the written report which had been distributed with the agenda.

### Report of the President

President Canzonetti reviewed the most recent developments pertaining to the professional liability situation. He informed the Council that the Board of Trustees of the Hartford County Medical Society had unanimously endorsed the CNA program on June 16th. He also reported on a recent meeting with an Aetna representative. Dr. Canzonetti was informed at that time by the representative that Aetna had no specific presentation to make to the Council at this time, the proposed rating schedule for the year 1981 - 82 was not available, and finally, that regardless of the State Society's decision, Aetna would continue to sell medical liability insurance in Connecticut.

John Dorsett of the American Health Systems Organization presented his evaluation of the current state of affairs. In his opinion a physician-owned professional liability company could still be formed successfully in Connecticut if the Hartford County Board of Trustees rescinded its endorsement of CNA, and if our captive physician-owned company endorsed the concept of territorial rating. Following protracted debate, the Council decided not to implement a captive company at this time. It voted to direct the American Health Systems and the CSMS legal counsel to complete all necessary documents and arrangements to allow the captive company to be made operational with a minimum of additional time and expense when and if future conditions in Connecticut were more conducive to the successful marketing of our company. This work was to be completed on or before August 1st, within the limits of the allotted budgetary amount of $150,000. It was also voted to endorse the CNA professional liability program.

Following considerable discussion, it was VOTED to direct American Health Systems and CSMS legal counsel to complete all necessary documents and arrangements to complete the structuring of CMIC (physician-owned company) so that it could be made operational within a minimum of time, when future conditions in Connecticut warrant establishing subject company. This work is to be completed on or before August 1 within the limits of budgetary funds of $150,000.

It was also VOTED to endorse the CNA professional liability program.

It was VOTED further to notify the Aetna confirming the notice previously given to Aetna which withdraws Society sponsorship of the Aetna program because of insufficient information from Aetna regarding the future of the program.

### Miscellaneous

Frank K. Abbot, M.D., suggested that staff distribute reports A and B from the AMA Council on Medical Service to the CSMS Committee on Statewide Medical Planning.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on June 25, 1981. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

Advest

**Connecticut's Leading Investment Firm**

**Hartford**
Six Central Row
Hartford, CT 06103
(203) 241-2000

37 Lewis Street
Hartford, CT 06103
(203) 522-5201

**Guilford**
1110 Boston Post Road
Guilford, CT 06437
(203) 457-1550

**Middletown**
50 Riverview Center
Middletown, CT 06457
(203) 347-4491

**New Britain**
30 Bank Street
New Britain, CT 06051
(203) 225-6371

**New Haven**
195 Church Street
New Haven, CT 06510
(203) 777-7356

**New London**
One Union Plaza
New London, CT 06320
(203) 443-2821

**Old Saybrook**
263 Main Street
Old Saybrook, CT 06475
(203) 388-1223

**39 offices throughout the Northeast.**

**When you invest**

**Advest**

Headquarters: Six Central Row, Hartford, CT 06103
(203) 525-1421 or Toll Free (800) 842-3807

Members of major securities exchanges.

# Primary Retroperitoneal Tumors: Presentation, Investigation, Management

RICHARD S. STAHL, M.D.

**ABSTRACT—Two examples of retroperitoneal tumors treated at the Yale-New Haven Medical Center are presented. Tissues of origin and concepts of diagnosis and treatment are reviewed.**

Retroperitoneal tumors have been described for at least two centuries - they remain highly variable in their location, behavior, and tissue of origin. Their early diagnosis and successful treatment continue to be elusive.

The presentation, investigation, and management of such lesions are reviewed after the presentation of two examples.

## Case Reports

**Case No. 1:** An octagenarian complained of a large slightly tender abdominal mass noted after a minor accident. He gave a history of occasional urinary symptoms but denied any previous illnesses. Examination demonstrated a slightly tender, 15 cm. right lower quadrant mass.

The patient's hemogram and chemistries were normal. Abdominal films, sonogram, pyelogram, GI series, and angiography characterized the lesion as a large cystic and solid mass extending to the pelvis and causing bowel and bladder deviation and hydronephrosis. Although not particularly vascular, the structure's blood supply was derived from right internal iliac system. Venous collateralization with caval and iliac compression were seen.

Open biopsy resulted in a disputed diagnosis of "synovioma". Subsequently, transperitoneal exploration demonstrated a large multicystic lower abdominal and pelvic mass. The reluctant aspiration of several cysts facilitated the removal of this lesion. During dissection, the ureter and the vena cava were identified and spared of injury. The patient was discharged one week postoperatively.

Gross examination confirmed the solid and cystic components of the tumor. Histopathologically, it was found to contain fibrous and epithelial components with a collagenous intercellular matrix. This fibrous, solid, and epithelioid mesothelioma was felt to be of low-grade malignancy.

**Case No. 2:** On routine examination a 72 year old white male was found to have a firm, non-tender mass extending from the right flank to the mid- and right-lower abdomen. He complained of right lower extremity swelling and diarrhea.

Hematologic studies were again unremarkable. This patient was also subjected to a lengthy radiologic work up. Echo of this lesion showed it to be solid and distinct from the liver or kidney.

The right colon was deviated superiorly and medially by the mass, while there was evidence for small bowel compression as well.

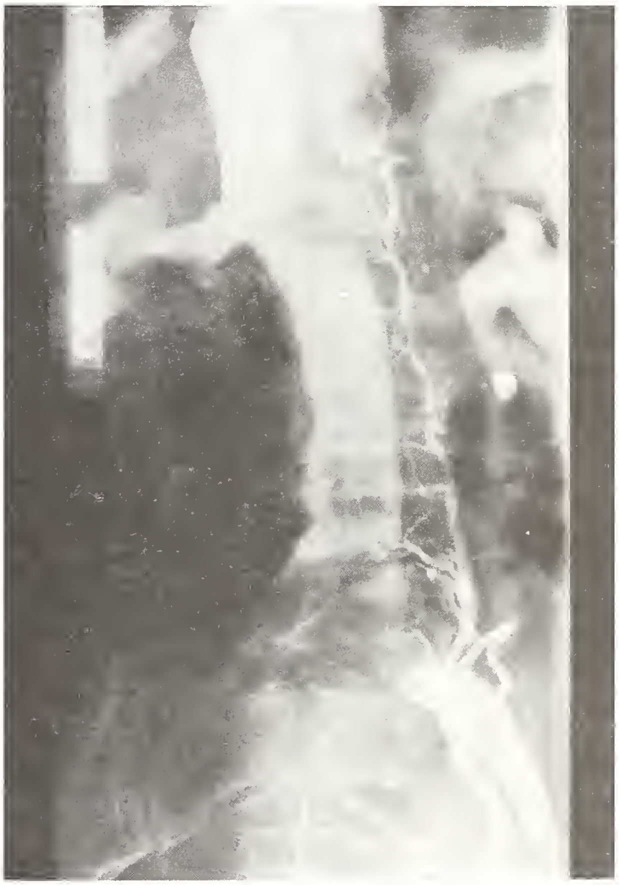


Figure No. 1
Venagram of patient No. 1 reveals compression of right iliac vein and distal vena cava with extensive collateralization. Note hydroureter in pyelogram phase.

---

RICHARD S. STAHL M.D., Chief Resident and Instructor, Section of General Surgery, The Department of Surgery, Yale University School of Medicine and Yale-New Haven Hospital.

Reprint requests to: 1454 Clairmont Rd., N.E., Decatur, GA 30033 (Dr. Stahl).

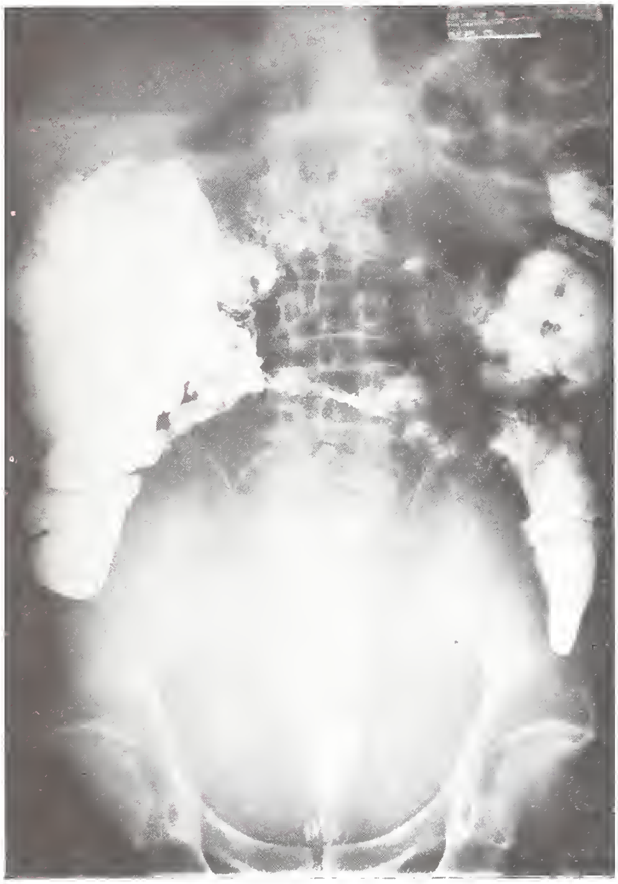


Figure No. 2
Small bowel draped over tumor mass on small bowel series.

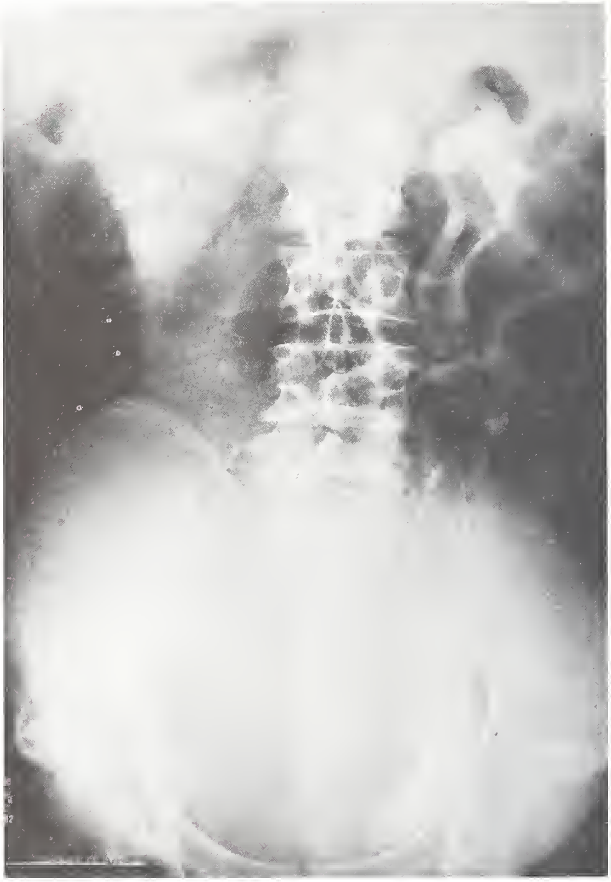


Figure No. 3
Hydroureter with leftward bladder deviation in patient No. 1.

Although the aorta was displaced, the lesion was relatively avascular. The right kidney was rotated upward along its transverse axis. Open biopsy was again inconclusive, showing only fibrosis and fat necrosis.

Consequently, the gentleman was taken to the operating room for resection of a 14.5 kg. well-differentiated liposarcoma via a combined extra- and intra-peritoneal approach. Microscopic examination revealed both lipoblasts and giant cells. Its malignancy was estimated to be of intermediate grade. Since satisfactory margins were not obtainable, a course of radiotherapy was initiated.

## Discussion

Arising behind the posterior wall of the peritoneum, primary retroperitoneal tumors have "no apparent connection"[1] with organs or major vessels except by areolar tissue. Many authors exclude neuroblastomas and lymphomas from consideration with primary retroperitoneal tumors.

While not a common problem, retroperitoneal tumors cannot be considered rare. Armstrong and Cohn cited a diagnosis of retroperitoneal tumor in 0.004% of 980,000 admissions. They also found that these lesions comprised 0.16% of all malignancies.[2] Most classifications of such neoplasms categorize each type with regard to its tissue or origin (See table 1).

Because of their location and independence of adult organs, most manifestations of such lesions are related to late obstruction or compression of adjacent structures by their enormous size. Physical findings, such as varicocoeles, edema, and neurological deficits, reflect such compression of surrounding tissues.

Retroperitoneal tumors may mimic multiple entities. Their differential diagnosis includes masses of renal, adrenal, pancreatic, hepatic, gynecologic, vascular, splenic, or lymphatic origin. Few diagnostic procedures are necessary once other diagnoses in the differential have been excluded. The intravenous pyelogram, with *both* AP and lateral views, is felt to be critical in demonstrating renal and ureteral position.[2]. These patients are often subjected to a myriad of diagnostic procedures, however. Furthermore, incisional biopsy is usually of little diagnostic or therapeutic benefit, as shown in the illustrative cases.

Operative treatment may provide a formidable challenge. A wide excision for cure is felt to be possible in only 20% of cases. Surgery, however, is felt to be mandatory for the diagnosis and assessment of resectability of these lesions. Although retroperitoneal tumors usually do not invade surrounding tissues, it should be anticipated that multiple organs may need to be resected. The operative mortality ranges from 10 to 25% and is higher in resection of recurrent tumors.[4] Morbidity is usually related to cardiopulmonary and vascular complications in this predominantly older age group.

Table 1
CLASSIFICATION OF RETROPERITONEAL TUMORS*

- I. Tumors of mesodermal origin
  - A. Tumors arising from adipose tissue
    - 1. Benign-lipoma
    - 2. Malignant-liposarcoma
  - B. Tumors arising from smooth muscle
    - 1. Benign-leiomyoma
    - 2. Malignant-leiomyosarcoma
  - C. Tumors arising from connective tissue
    - 1. Benign-fibroma (not reported)
    - 2. Malignant-fibrosarcoma
  - D. Tumors arising from striated muscle
    - 1. Benign-rhabdomyoma (not reported)
    - 2. Malignant-rhabdomyosarcoma
  - E. Tumors arising from lymph vessels
    - 1. Benign-lymphangioma
    - 2. Malignant-lymphangiosarcoma (unknown)
  - F. Tumors arising from blood vessels
    - 1. Hemangioma and angiosarcoma
    - 2. Hemangiopericytoma, benign and malignant
  - G. Tumors arising from primitive mesenchyme
    - 1. Myxoma-myxosarcoma
  - H. Tumors of uncertain origin
    - 1. Xanthogranuloma
- II. Tumors of neurogenous origin
  - A. Tumors of nerve sheath orgin
    - 1. Nonencapsulated neurofibroma
    - 2. Encapsulated neurilemoma
    - 3. Malignant schwannoma
  - B. Tumors arising from sympathetic nervous system
    - 1. Ganglioneuroma
    - 2. Sympathicoblastoma
    - 3. Neuroblastoma
  - C. Tumors arising from heterotopic cortical adrenal and from chromaffin tissue
    - 1. Carcinoma arising from cortical adrenal tissue
    - 2. Malignant nonchromaffin paraganglioma
    - 3. Paraganglioma
    - 4. Functioning pheochromocytoma
- III. Remnants of renal blastema
- IV. Tumors arising from embryonic remnants
  - A. Benign and malignant teratomas
  - B. Chordomas
- V. Metastatic malignant tumors

*From Ackerman LV: *Atlas of Tumor Pathology.* Section VI - Fascicles 23 and 24: *Tumors of the Retroperitoneum, Mesentery, and Peritoneum,* American Institute of Pathology, 1954, pp. 12-13.

The efficacy of adjuvant therapy is difficult to evaluate because of the low incidence and variability of origin of retroperitoneal tumors. Radiotherapy is implemented by many in select cases, including incompletely excised lesions, recurrences, and sensitive lesions (e.g., lymphomas).[5] The recurrence rate quoted for malignant retroperitoneal tumors is 30 - 50%. Although the prognosis is often poor, long-term survival has been reported after resection of recurrences.[4] Such patients should therefore be followed closely and aggressively treated with individualization of treatment.

## REFERENCES

1. Donnelly BA: Primary Retroperitoneal Tumors - A Report of 95 Cases and a Review of the Literature. SGO 83: 705-717, 1946
2. Armstrong JR, Cohn I Jr.: Primary Malignant Retroperitoneal Tumors. Am J Surg 110:937-943, 1965
3. McCarthy MP, Frogge JD, Delgado R, Mac P: A Large Retroperitoneal Lipoma. J Urol 118:478, 1977
4. Binder SC, Katz B, Sheridan B: Retroperitoneal Liposarcoma. Ann Surg 187: 257-261, 1978
5. Schwartz SI, Shires GT, Spencer FC, Storer EH: Principles of Surgery. Third Edition McGraw-Hill Book Co New York NY 1979 pp. 1451-5

---

# Acute Management of Cardiothoracic Trauma

HAROLD R. KAY, M.D.

## Introduction

Although cardiothoracic trauma accounts for a significant percentage of the trauma seen in a busy Emergency Room, many of the injuries are not life-threatening and less than 10% will require formal thoracotomy[1]. However there are three or four classes of injury in which rapid diagnosis and intervention is mandatory (Table 1).

For patients with major cardiothoracic injuries, a rapid, thorough physical examination is critical. Auscultation of the heart and lungs and examination of femoral pulses and neck veins can be life saving; waiting for chest x-rays, CVP measurements, EKG or lab work can be disastrous. Pysicians involved in delivering emergency care must learn to rapidly recognize and properly treat these critical injuries.

## Life-Threatening Conditions (Table I)

In any resuscitation, whether it be for cardiac arrest or for trauma, circulation of unoxygenated blood is useless. Anoxia is the danger and three minutes of complete anoxia is fatal. If a patient comes to the emergency room cyanotic with inadequate breath sounds, a patent airway and ventilation must be established early in the resuscitation. Bilateral absence of breath sounds is evidence that the patient requires ventilatory assistance. The assistance may be as simple as clearing the airway of vomitus or foreign body. It may mean assisted ventilation via Ambu bag, endo-

---

HAROLD R. KAY, M.D., Chief Resident, Cardiothoracic Surgery Yale-New Haven Hospital, New Haven.

Table I.
LIFE THREATENING EMERGENCIES

| | *Signs/Symptoms* | *Treatment* |
|---|---|---|
| I. Inadequate ventilation | Decreased breath sounds<br>Cyanosis | Clear airway<br>Intubate<br>Chest tube |
| II. Shock | Rapid, thready femoral pulse<br>Bradycardia and hypotension | Volume -blood or Ringer's lactate<br>Treatment of cerebral or cardiac injury |
| III. Pericardial tamponade | Jugular venous distention, pallor, restlessness, pulsus paradoxus | Pericardiocentesis<br>Operative repair |
| IV. Traumatic rupture of the aorta | History, sternal pain, upper extremity hypertension, widened mediastinum | Angiography<br>Operative repair |

Table II.
TIME COURSE OF MORTALITY FOLLOWING TRAUMATIC RUPTURE OF THE AORTA

| *Time of Death Following Accident (Percent)* | | | | |
|---|---|---|---|---|
| DOA - < *1 hour* | *1 - 48 hrs.* | *2 - 7 days* | *8 - 14 days* | > 14 days |
| 87 | 4 | 4 | 2 | 2 |

tracheal intubation or tracheostomy, but maintenance of adequate ventilation is paramount in any resuscitation.

Once adequate ventilation is assured, the second priority is hemodynamic resuscitation. A rapid, thready femoral pulse is evidence of poor circulation. Slow pulse and hypotension after trauma are suggestive of severe cerebral or cardiac injury. Most post-traumatic hypotension is secondary to hypovolemia. More simply stated, most trauma patients require volume.

After ventilation and hemodynamic stability are attained, the third priority should be consideration of pericardial tamponade. Physical examination in patients with tamponade usually shows marked jugular venous distention, pallor, restlessness and pulsus paradoxus in a patient *in extremis.* Most patients die of tamponade because the diagnosis is never considered. Once the diagnosis of tamponade is suspected, appropriate decompression, usually needle aspiration via an epigastric approach[2, 3] is mandatory. Although tamponade can usually be relieved immediately, most patients will re-tamponade and require careful monitoring or, more commonly, operative control of the bleeding site.[4]

The diagnosis of traumatic rupture of the aorta must be considered following blunt trauma. Seventy percent of traumatic ruptures occur as a deceleration (e.g. steering wheel) injury following automobile accidents[5]. Classically the automobile is moving at high speed and the victim gets thrown against the steering wheel when the car stops abruptly. Most victims die on the scene from exsanguinating hemorrhage, but between 10 and 20% survive to reach the hospital[5, 6]. Eighty seven percent will die within one hour. These patients are not usually salvageable. However, 13% will survive the initial injury. Of the 13% that survive, ⅓ will die within 48 hours, and an additional ⅓ will die within a few days. Thus 67% are potentially salvageable with early diagnosis and operation.

As Table III suggests, there are several clues to diagnosis. The most important is a history of major deceleration injury. Physical examination may reveal upper extremity hypertension, precordial systolic murmur, and decreased leg pulses[7, 8]. Radiologic signs include widening of the mediastinum, hemothorax and depression of the left main stem bronchus. However, a high index of suspicion is critical and only angiography is diagnostic. Immediate aortography is mandatory if there is clinical suspicion of aortic injury.

In summary, then, the four life-threatening cardiothoracic problems that require immediate attention are: inadequate ventilation including tension pneumothorax, exsanguinating hemorrhage, cardiac tamponade, and traumatic rupture of the aorta. Except for aortic injury, these problems can be rapidly and easily assessed on physical examination and, in the critically ill patient, should be treated on the basis of physical examination.

Table III.
SUGGESTIVE SIGNS OF TRAUMATIC RUPTURE OF THE AORTA

I. History of deceleration injury
II. Physical Examination
    1. Sternal pain
    2. Upper extremity hypertension, decreased lower extremity pulses
    3. Precordial systolic murmur
III. Radiology
    1. Widened mediastinum
    2. Hemothorax
    3. Depression of left mainstem bronchus

## Emergency Thoracotomy (Table IV)

Enthusiasm for immediate emergency room thoracotomy varies from institution to institution. Although it is technically not difficult to do an emergency thoracotomy, it is important to understand the reasons for doing a thoracotomy, and it is essential that the person doing the thoracotomy know what to do after the chest has been opened. The patient should be positioned with his left side slightly elevated on a pillow and the chest entered through the 4th or 5th intercostal space[6, 9]. Some semblance of aseptic technique should be attempted.

The indications for emergency thoracotomy follow from an understanding of what can be done once the chest has been opened. There are only five interventions that can be done during emergency thoracotomy (Table IV) and there is no advantage to emergency thoracotomy if the problem is not amenable to treatment by one of these five maneuvers.

The first indication is to perform open cardiac message in a patient in whom closed cardiac massage is not possible; e.g. following major chest wall trauma or sternal fractures. The second indication is to obtain control of exsanguinating cardiac or pulmonary hemorrhage. The third indication is to remove pericardial clot which cannot be evacuated by needle aspiration. The fourth indication is to cross-clamp the descending thoracic aorta preserving critical cerebral and coronary flow in cases of distal abdominal hemorrhage. If coronary and cerebral flow can be maintained, a few minutes may be gained during which intravascular volume can be restored. Last, in case of a major airway laceration, emergency control of the airway can be obtained.

It then follows that during emergency thoracotomy it is important to open the pericardium. Opening the pericardium excludes the diagnosis of tamponade or relieves the tamponade and also allows for effective internal massage which may be impossible with an intact pericardium. It also follows, that, if the thoracotomy is done for distal exsanguinating hemorrhage, it is important to control the descending aorta. An additional advantage of thoracotomy is that when the chest is open and the heart exposed, circulating blood volume and ventilation can be easily assessed. Since internal and external massage are ineffective in a hypovolemic patient with an empty heart, blood volume must be restored before massage can be effective.

The important points about emergency thoracotomy are (1) open the pericardium and (2) cross-clamp the aorta to perfuse the heart and brain. The indications for thoracotomy are (1) internal massage, (2) control of cardiac or major vessel hemorrhage, (3) relief of tamponade, (4) compression of thoracic aorta, and (5) control of major airway laceration which cannot be controlled by an endotracheal tube. Even in cases of suspected major vessel injury, external massage should be started first and thoracotomy considered if external massage is ineffective. Even in large series of emergency room thoracotomies, the salvage rate is less than 5%[9].

Table IV
INDICATIONS FOR EMERGENCY THORACOTOMY AND TECHNICAL CONSIDERATIONS

| *Indication (Traumatic Lesion)* | *Important Technical Points* |
|---|---|
| I. Open cardiac massage when skeletal injuries preclude closed chest massage. | 1. Open pericardium.<br>2. Restore vascular volume. |
| II. Exsanguinating cardiac or pulmonary hemorrhage. | 1. Open pericardium.<br>2. Digital control of hemorrhage.<br>3. ? compress or cross clamp descending aorta to maintain cerebral and coronary flow. |
| III. Relieve tamponade, especially pericardial clots. | 1. Open pericardium. |
| IV. Distal (abdominal) exsanguinating hemorrhage. | 1. Compress or cross clamp descending aorta.<br>2. Restore intravascular volume. |
| V. Major airway laceration with inadequate ventilation. | 1. Digital control, compression of airway laceration. |

## Other Thoracic Injuries (Table V)

Classically, trauma is divided into blunt and penetrating trauma. the commonest blunt trauma injury is to the chest wall itself, e.g., rib or sternal fractures. These can range from one broken rib to massive flail chest. The important principle is that rib or sternal fractures will heal. The major concern is associated injuries and attention must be directed to prevent deterioration after the initial trauma.

Following chest wall trauma, care of the underlying lung is of major importance. In cases of multiple rib fractures, it is important to keep the underlying lung expanded. Splinting of a painful area will lead to atelectasis; splinting is prevented by intercostal nerve block[11] and pain medication. The technique of rib strapping or taping has fallen into disuse. It is also important to follow arterial blood gases and to intubate the patient if his blood gases start to deteriorate. Airway leaks in the lung or bronchi after rib injury or blunt trauma are common and initial treatment is chest tube and under water suction.

Rupture of the diaphragm is a common injury following blunt trauma. The mechanism of injury is usually increased intra-abdominal pressure. If the tear is small, especially if it is in the right chest, it can be managed by chest tube drainage. Larger lacerations require repair, usually via the transabdominal approach because most patients require laparotomy for associated intra-abdominal injuries.

Other less common injuries include bronchial injury and traumatic pneumatocele in patients with pulmonary contusions. Major bronchial injury within the media-

Table V
TREATMENT OF SEMI-EMERGENT CARDIO-THORACIC INJURIES

| *Injury* | *Treatment* | *Goal* |
|---|---|---|
| Chest wall instability "flail chest" multiple rib fractures | Assisted ventilation Intercostal nerve block, Adequate pain medication | Prevent atelectasis |
| Pulmonary laceration (pneumothorax) | Chest tube, underwater suction | Expand lung, seal leaks |
| Rupture of the diaphragm | Operative repair | — |
| Pulmonary contusion | Supportive | Maintain oxygenation |
| Bronchial laceration | Operative repair | Maintain ventilation |
| Pneumopericardium | Usually observation, may require subxyphoid tube decompression | — |
| Pneumomediastinum | Usually observation, must rule out esophageal, bronchial injuries | — |
| Sucking chest wound | Cover, chest tube | Prevent tension pneumothorax |

stinum can present as tension pneumomediastinum which may not be relieved by a chest tube and may require mediastinal decompression.

Penetrating chest trauma is easier to diagnose and manage because potential injuries are apparent from first examination. Treatment of penetrating trauma should be routine: all sucking wounds should be covered; all penetrating wounds of the thoracic space require chest tubes.

The usual problem in treating hemothorax following penetrating injury is in determining what patients require thoracotomy to control hemorrhage. Excessive bleeding, that is, bleeding that will require operation to control, is defined both by the extent of the initial hemorrhage and the continued rate of bleeding. Our current protocol is to explore patients who bleed 1,000 cc of blood immediately after the chest tube is inserted and who continue to bleed. Continued bleeding, over 200 cc an hour for more than three hours, is another indication for thoracotomy. Significant continued hemorrhage over 200 cc an hour after the lung is expanded implies damage to a major pulmonary vessel, usually a branch of the pulmonary artery or vein.

In cases of combined thoraco-abdominal trauma, for example, to the liver, the diaphragmatic aorta, diaphragmatic cava or in cases where there are critical injuries to major organs both above and below the diaphragm, consideration should be given to a combined thoraco-abdominal procedure.

One frequently missed thoracic injury is esophageal laceration. A classic example is a gunshot wound which enters one thorax and crosses the midline. There injuries are almost invariably associated with mediastinal damage. If there is no injury to the heart or major vessels, a careful search must be made to exclude esophageal injury. Early signs of esophageal lacerations may be subtle and must be excluded by radiologic contrast examination.

Sixty-two to 84% of penetrating injuries to the heart are immediately fatal[9]. Patients who arrive in the emergency room alive usually die from tamponade or exsanguinating hemorrhage. For these patients time is critical; tamponade must be relieved and exsanguinating hemorrhage must be stopped.

## Summary

In summary, some of the common injuries seen after cardiothoracic trauma have been described and their treatment outlined. The four life-threatening injuries that require immediate diagnosis and treatment are: inadequate ventilation including tension pneumothorax, exsanguinating hemorrhage, pericardial tamponade, and traumatic rupture of the aorta. Except for traumatic rupture of the aorta, all diagnoses can and should be made after rapid history and physical examination. Diagnosis and treatment must be rapid. A high index of suspicion is important for all of these injuries. Emergency thoracotomy is reserved for specific indications and must be done properly. Except for these four life-threatening problems, most patients with cardiothoracic trauma can be stabilized and managed effectively with assisted ventilation and chest tube drainage.

## REFERENCES

1. Keen G: Chest Injuries Bristol John Wright and Sons 1975, p. 153
2. Ravitch MM and Blalock A: Aspiration of blood from pericardium in treatment of acute cardiac tamponade after injury: further experience, with report of cases. Arch Surg 58: 463, 1949
3. Elkin DC and Campbell RG: Cardiac tamponade, treated by aspiration. Ann Surg 133: 623, 1951
4. Beall AC, Ochsner JL, Morris GC: et al: Penetrating wounds of the heart. J Trauma 1: 195, 1961
5. Parmley LF, Mattingly TW, Manion WC et al: Non-penetrating traumatic injury of the aorta. Circulation 17: 1086, 1958
6. Keen G: Chest Injuries. Bristol John Wright and Sons 1975, p. 168
7. Rice WG and Wittstruck KP: Acute hypertension and delayed traumatic rupture of the aorta. JAMA 147: 915, 1951
8. Spencer FC, Guerin PF, Blake, HA et al: A report of 15 patients with traumatic rupture of the thoracic aorta. J Thorac Cardiovasc Surg 41: 1, 1961
9. Mattox KL, Beall AC, Jordan GL: Cardiorapphy in the emergency center. J Thorac Cardiovasc Surg 68: 886, 1974
10. Borrie J: Management of Thoracic Emergencies. 3rd ed New York Appleton-Century-Crofts 1980, p. 772
11. Rovenstine EA and Byrd ML: Use of a regional nerve block during treatment for fractured ribs. Am J Surg 46: 303, 1939

# The Use of Thrombolytic Therapy in Venous Thromboembolic Disease

RONALD N. RUBIN, M.D.

Thromboembolic disease, in particular deep vein thrombosis of the extremities and its complication, pulmonary embolism, remains as a significant cause of morbidity and even mortality in hospitalized patients. It has been estimated that such complications will occur in 500,000 hospitalized patients, and there will be a fatality rate of as many as 10% or 50,000 people[1].

Certain subgroups are particularly prone to such events. Often venous stasis with its resultant procoagulant effects is involved; but other factors such as tissue damage and necrosis, as well as blood vessel manipulation and damage are also involved in these predispositions. Thus, groups at risk include medical patients at bed rest (e.g. congestive heart failure and myocardial infarction), post partum state, long-bone fractures of the lower extremity, patients with neoplasm and finally and, very noteworthy, post-operative patients.

Traditional preventative and therapeutic maneuvers for venous thrombosis have involved various regimens of heparin[2]. Such therapy has withstood the test of time and usage in regards to prevention of patient mortality. However, questions remain as regards morbidity and long term efficacy. Recently, data have emerged demonstrating documented recurrence of pulmonary embolism while on heparin therapy[3]. In addition, there are firm data suggesting significant damage to venous valves and valvular function by clot which heparin therapy simply does not address[4]. Thus, alternative therapies have been sought in treatment for deep venous thrombosis and one such alternative is the use of thrombolytic therapy.

There are two thrombolytic agents clinically available today—streptokinase (SK) and urokinase (UK). As Table 1 demonstrates, these agents act slightly differently in the generation of plasmin, the protease which actually lyses the fibrin clots. Urokinase, synthesized from human kidney tissue culture and rather expensive, directly mediates the conversion of plasminogen to active plasmin. Streptokinase, a much cheaper compound synthesized from cultures of streptococci, activates plasminogen indirectly via formation of an activator complex which then yields active plasmin. The net result of either is the formation of activated plasmin which then goes about lysing fibrin clots. It must be noted that this lysis is indiscriminant in that not only are pathologic thrombi affected, but also physiologic thrombi, such as post-operative wounds. Thus, as will be discussed later, patient selection is critical if bleeding complications are to be avoided. As to which agents are to be used, UK is a human-derived protein, is non-antigenic and thus avoids allergic problems. However, it is quite expensive-roughly five times more than SK. SK is a foreign protein so allergic phenomena must be considered. However, in 1981, the preparations are far purer than those used in older studies. This avoids much of the allergic problems previously seen. As to the ability to lyse clot and the incidence of bleeding complications, the two agents are no different. These facts combined with its far lower cost make SK the agent we mainly use at Temple University Hospital.

There are now plentiful data on the clinical experiences with thrombolytic therapy. Although clinical experience dictates that DVT patients on heparin "get better," the kinetics of heparin-treated DVT are

Table 1
THROMBOLYTIC AGENTS AVAILABLE

| | *Streptokinase* | *Urokinase* |
|---|---|---|
| SOURCE | Bacterial Culture | Fetal Kidney Culture |
| MECHANISM | Active Intermediate | Direct Cleavage |
| BLOOD CHANGES | Lytic State | Lytic State |
| SIDE EFFECTS | Allergic (rare)<br>Pyrogenic | Pyrogenic<br>(less common) |
| COST/12 HOURS | 175.00 | 2000.00 |

---

RONALD N. RUBIN, M.D., Assistant Professor of Medicine, Temple University and School of Medicine; Director, Temple University Hospital In-Patient Oncology Unit; Member, Temple University School of Medicine Thrombosis Center, Philadelphia, PA.

inferior if compared to lytic agents as is shown in Table 2. Heparin prevents clots from propagating during the ensuing 7-10 days while the body recanalizes and re-endothelializes the vessel wall. The venous valves are destroyed and themselves coated over in this process. Lytic therapy, on the other hand, is clearly anatomically superior as there is complete, substantial (more than 80%) or at least partial lysis quickly in greater than 65% of treated patients[5, 6, 7]. These data are irrefutable but there has remained a question as to whether such clot lysis anatomically demonstrated translates into (1) lessening the potential for pulmonary embolism while on therapy, or (2) decreasing the incidence of rethrombosis and postphlebitic changes in the limb. In pulmonary embolism (table 3), the Urokinase-Streptokinase Pulmonary Embolism Trial clearly demonstrated that lytic therapy could far more rapidly clear the pulmonary arteries of clot, improve the pulmonary artery pressures, and increase cardiac output. However, the short term mortality in the first month was no different from the heparin-treated controls[8]. Recently, Sasahara et al have shown, however, that subtle pathology remains in the cardiopulmonary systems of patients who have sustained a pulmonary embolism, even months to years after sustaining the acute event. This effect may be more marked and of more physiological significance in patients with prior heart and/or lung disease[9].

In other venous thrombotic disorders, data now exist attesting to the long-term efficacy of lytic agents in the treatment of proximal DVT. "Proximal" means involving the axillary veins in the upper extremity and popliteal veins or cephalad in the lower extremity since it is the proximal type of DVT that (1) has a 15-30% incidence of complicating pulmonary embolsim, and (2) destroys venous valves with resultant "post-phlebitic leg syndromes" of venous hypertension, venous claudication, chronic edema and even leg ulcerations[10]. These are the patients who should be considered for lytic agents. Lytic therapy should not be used for trivial soleus and calf deep venous thrombosis. In a study by Eliot et al, lytic agents and standard heparin therapy for proximal DVT were compared in a double-blind manner[11]. The patients had strict objective longitudinal follow-up. During the acute and sub-acute phases, there was follow up venography (Day 7, 3 months, and 1 year) to objectively document the degree of lysis, valvular competence and collaterals. In addition, clinically detailed observations regarding chronic leg pain, edema and ulceration were recorded. Table 4 summarizes results. Of interest, two of 25 (8%) in the heparin group died of autopsy-proven pulmonary embolism. The striking difference, however, is in the degree of symptoms and signs in the affected legs between the two groups. Nineteen patients in the heparin group had symptoms and signs in the affected legs compared to only eight in the SK group. This was significant statistically. Note that four heparinized patients had venous claudication and one developed leg ulcers-both severe morbid symptoms. In addition, venography performed in all patients showed that in the heparin-treated group none of 25 had complete or substantial lysis of clots while streptokinase resulted in 17 of 26 (65%) in whose leg veins there was at least 80% of clot lysis. Morbidity related to therapy was acceptable with three patients getting fevers and two patients with minor bleeding. Heparin was free of bleeding; however, in the heparin group there were two of 25 early fatalities due to recurrent pulmonary embolism. It is noteworthy that another patient also developed an angiographically documented but non-fatal pulmonary embolism on heparin therapy. Thus three of 25 of the patients on anticoagulants developed pulmonary embolism while on therapy. This seems to put to rest the old belief that once a patient is placed on anticoagulants, pulmonary embolism does not occur.

Table 2

EVIDENCE OF SUPERIOR ANATOMIC EFFECT USING SK/UK

| *Study* | *Patients* | *Duration Between Venograms* | *Normal (SK)* | *Normal (Heparin)* |
|---|---|---|---|---|
| KAKKAR | 15 | 6-12 months | 56% | 8% |
| ARNESON | 50 | 12 months | 55% | 8% |
| ELLIOT | 51 | 12 months | 55% | 0% |

Table 3

RESULTS OF THROMBOLYTIC THERAPY IN PULMONARY EMBOLISM 12 - 24 HOURS AFTER THERAPY STARTED

| | *Heparin* | *12 Hour SK* | *24 Hour SK* |
|---|---|---|---|
| Change in Angiogram (4 point system) | 0.54 | 1.66 | 1.70 |
| Change in Pulmonary Pressures (mm Hg) | -1.1 | -7.28 | -7.53 |
| Change in Cardiac Index (L/min/M2) | -0.05 | +0.06 | +0.60 |

Table 4

THROMBOLYTIC THERAPY IN ACUTE PROXIMAL VENOUS THROMBOSIS

| | *Heparin* | *Streptokinase* |
|---|---|---|
| NUMBER OF PATIENTS | 25 | 26 |
| MEAN DURATION OF SX (days) | 3 | 3 |
| DEATHS FROM MASSIVE PE | 2 | 0 |
| ASYMPTOMATIC IN AFFECTED LEG | 2 | 12 |
| SYMPTOMATIC IN AFFECTED LEG | 19 | 12 |
| VENOUS CLAUDICATION | 4 | 2 |
| VENOUS ULCERATIONS | 1 | 0 |

A similar study from Sweden has since appeared with almost identical findings and results[12]. For major proximal DVT, therefore, there are now data suggesting that lytic therapy is clearly superior to standard heparin regimens. We at the present time are repeating certain aspects of these studies at Temple's Thrombosis center to confirm this superiority; preliminary findings are in agreement. In addition, we are stratifying for durations of therapy to determine if we can get similar results with 24 or 48 hours of therapy rather than 72 hours. Data from the Urokinase-Streptokinase Pulmonary Embolism Trial suggest that this may be the case[8]. We and other investigators[13] believe that maximal lysis, although not all of the lysis, occurs in the initial 24 hours of therapy.

Once one makes the decision to use lytic agents, clinical experience has accrued to aid in their optimal usage[13, 14]. Table 5 points out several important considerations in lytic therapy. These patients will bleed if jostled or invaded. Thus, invasive procedures such as arterial punctures, biopsies and cutdowns should be avoided during lytic therapy. Bed rest should be enforced with as little manipulation of the patient as is possible in order to obtain best results. The role of invasive procedures in bleeding is clearly shown by data comparing the bleeding complications in two studies where the lytic agents were similar but clinical settings different. The UK-SK Pulmonary Embolism trial had much manipulation[8]. Cutdowns were performed to do right heart catherterization studies, and multiple arterial punctures were repeatedly performed to monitor blood gas data. This study was designed to collect more data than is now needed. This resulted in excessive "minor" bleeding in that hematocrits slowly dropped and in many instances patients required transfusions of packed cells. Still, lytic therapy had to be stopped due to major bleeding in but one patient despite these, by today's standards, suboptimal conditions[8]. Conversely, in the SK-Myocardial infarction trial[15] where the patients, in light of their myocardial infarcts, were strictly at bed rest with minimal procedures and interventions, *no* patient of 54 treated with SK required transfusion. This emphasizes that minor bleeding is to be expected and that avoidance of invasive procedures during lytic therapy in itself avoids most of the significant bleeding complications.

Table 5

ADDITIONAL CLINICAL CONSIDERATIONS WITH LYTIC THERAPY

I. Invasive Procedures are avoided.
II. Absolute bedrest is essential.
    A. Undue manipulations and extra movements avoided.
III. Other medications are screened.
    A. No aspirin, anticoagulants, etc.
IV. Minor bleeding is expected and conservatively managed.
    A. Infusions not stopped for such bleeding
V. Therapy stopped because of major bleeding or bleeding into poorly accessible areas.
    A. Packed cells, FFP, Cryoprecipitates and EACA given in serious situations.

Table 5b

PATIENT SELECTION FOR THROMBOLYTIC THERAPY

I. Secure to diagnosis and treat only those patients who can benefit from lytic therapy.
II. Diagnosis of DVT confirmed by venography.
    A. Only clots proximal to the popliteal vein should receive lytic agents.
    B. Trivial calf and foot clots should not receive lytic agents.
III. Fresh clots undergo lysis.
    A. Symptoms should be $\leq$7 days prior to venographic confirmation.
IV. Contraindications must be considered.

Clearly, other anticoagulants and antiplatelet agents are to be avoided. One does not want to delete the platelet factor of hemostasis for example, giving aspirin to patients in the thrombolytic state. Minor bleeding from veni punctures is to be expected and can conservatively be managed by local pressure. However, if more severe (Transfusion-dependent) bleeding occurs or if bleeding into vital structures (airway) or inaccessible areas (CNS, GI tract) is suspected, then SK should be stopped. Therapy for such bleeding involves transfusion of fresh frozen plasma and cryoprecipitates to replace the diminished fibrinogen and other coagulation factors. This will most often suffice with cessation of bleeding within two hours. Epsilon amino caproic acid (EACA, amicar) can be given to even more quickly stop fibrinolysis.

Care first must also be taken to properly select patients for lytic therapy. We should treat only patients who will be helped by therapy and should avoid any patients who may be harmed by it. Since anticoagulants of any kind have serious side effects and dangers, the diagnosis of the thrombosis or embolism should be secure before any form of therapy is started. Only venogram-confirmed deep venous thrombosis should be treated, although a recent article by Hirsh et al suggests that combining the I 125 fibrinogen-scan with impedance plethysmography is as good[16]. I prefer a pulmonary angiogram for lung clots but in certain instances a diagnostic ventilation/perfusion lung scan may be used. As stated before, distal DVT involving only the calf and the soleus veins has a very low incidence of sequelae or chronic venous problems. Therefore, I recommend lytic therapy only for the dangerous proximal clots, e.g. popliteal-femoral-ileal, as these clots do destroy valves and also embolize. Lytic agents work best in fresh clots so the DVT should have been present, as best can be ascertained, for less than seven days prior to the initiation of therapy. Old and chronic clots are organized and will not lyse. In order to avoid bleeding, there are patients who should not receive these agents (Table 6). Many of these are similar contraindications to the use of heparin as well. Actively bleeding lesions or the presence of central nervous system disease are absolute contraindications. The remainder are relative and depend on the clinical

Table 6

CONTRAINDICATIONS TO THROMBOLYTIC THERAPY

1. Actively bleeding lesions
2. History of active intracranial disorders such as CVA, recent TIA, metastases or AV malformations.
3. Pregnancy and menstruation.
4. Large abrasive type wounds less than 14 days.
5. Hip surgery within 21 days.
6. General Surgery within 7 - 10 days.
7. Deep closed biopsy within 10 days.
8. Other nonspecific contraindications to anticoagulation such as pre-existing hemorrhagic diathesis, diastolic hypertension greater than 110 mm Hg, uremia, severe liver failure etc.

settings. If one adheres to these contraindications, morbid hemorrhage will be rare.

The specifics of administration of SK are largely empirical. Fancy titrations and dose adjustments are no longer used and it is no more difficult to monitor than heparin alone. Prior to therapy, routine coagulation screening should be performed to detect pre-existing hemorrhagic diathesis, e.g., thrombocytopenia. The patients are then given a loading dose of 250,000 units of SK over 30 minutes via an infusion pump and then maintenance SK is given at 100,000 units per hour. After the first 3-4 hours of therapy, any one of a number of lab tests is performed to insure that fibrinolytic inhibitiors have been overcome and the patient is in the so-called "lytic state." Fibrinogen lowered to less than half its pre-therapy level, elevations of fibrin degradation products and prolongation of thrombin time or activated partial thromboplastin times to more than twice control suffice. All tests need not be done; one or two easily performed in the individual hospital are adequate. It is noteworthy and perhaps unfortunate that once this "lytic state" is secured, none of the above tests are of further value in that they will not correlate with either tendency to bleed or efficacy of clot dissolution[13, 14]. Therapy duration is variable. We use 12-24 hours in pulmonary embolism and 24-72 hours for DVT in the legs. The data presented earlier from South Africa and Sweden were for a 72-hour infusion. Clearly, less therapy would be even safer and more convenient, and we are studying different dosage regimens. After SK, heparin is given as in standard regimens but we advocate at least a two to four hour hiatus between the cessation of SK and the starting of heparin. Analysis of the data reveals most bleeding occurs just as heparin is started after SK. There is still considerable plasmin effect for at least two hours after cessation of SK and this effect coupled with heparin anticoagulation results in a profound hemorrhagic state which explains this bleeding if heparin is started too quickly.

In summary, at this time the justification for thrombolytic therapy, which is slightly more expensive and not without complications, is its unique ability to dissolve clot in DVT with preservation of venous valvular function and prevention of the rather significant and expensive morbidity of the post-phlebitic limb. In addition, data are accruing that this clot-lysis, although not significantly altering acute mortality in pulmonary embolism, may preserve pulmonary and cardiac function in the long term in this type of patient with pre-existing cardiopulmonary disease. With these facts in mind, SK therapy is probably the treatment of choice for radiographically proven DVT if the history is less than seven days. It should be strongly considered in massive pulmonary embolism or any documented PE in a patient with significant underlying cardiac or pulmonary disease. Complications can be avoided by careful patient selection, close clinic observation and avoidance of all invasive procedures and manipulations during therapy.

## REFERENCES

1. Moser KM:Pulmonary Thromboembolism:Harrison's Principles of Internal Medicine. Thorn GW,Adams RD, Braunwald E, Isselbacher KJ and Petersdorf RG, Eds. McGraw-Hill, New York, P1401,1977
2. Kakkar VV, Corrigan TP, Fossard DP et al: Prevention of fatal post-operative pulmonary embolism by low doses of heparin. Lancet 2:45-55, 1975
3. Thomas DP:Treatment of pulmonary embolism disease. A critical review of some aspects of current therapy. N.Engl J Med 273:885-991,1965
4. Robertson BR:On thrombosis, thrombolysis and fibrinolysis Acta Chir Scand Supp 421:1-51,1971
5. Kakkar VV, Flanc C, Howe CT et al:Treatment of Deep vein thrombosis. A trial of heparin, streptokinase and arvin Br Med J 1:806-810,1969
6. Tsapogas MJ, Peabody RA, Wu KT et al:Controlled study of thrombolytic therapy in deep vein thrombosis Surgery 74:973-984,1973
7. Porter JM, Seaman AJ, Common HH et al:Comparison of heparin and streptokinase in the treatment of venous thrombosis AM Surg 41:511-519,1975
8. A National Cooperative Study:Urokinase-Streptokinase Embolism Trial:Phase 2 results:a cooperative study JAMA 229:1606-1613,1974
9. Sharma GV, Burleson VA and Sasahaera AA:Effect of thrombolytic therapy on pulmonary-capillary blood volume in patients with pulmonary embolism NEJM 303:842-846,1980
10. Frantantoni JC, Ness P and Simon TL:Thrombolytic therapy. Current Status NEJM 293:1073-1078,1975
11. Eliot MS, Immelman EJ, Jeffery P et al:A comparitive randomized study of heparin versus streptokinase in the treatment of acute proximal venous thrombosis:An interim report of a prospective trial. Br J Surg 66:838-843,1979
12. Arneson H, Heilo A, Jacobsen E et al:A prospective trial of streptokinase and heparin in the treatment of deep vein thrombosis Acta Med Scand 203:457-463,1978
13. Marder VJ:The use of thrombolytic agents:Choice of patient, drug administration, laboratory monitoring Ann Int Med 90:802-808,1979
14. Bell WR and Meek AG:Guidelines for the use of thrombolytic agents NEJM 301:1266-1270,1979
15. Simon TL, Ware JH and Stengle JM:Clinical trials of thrombolytic agents in myocardial infarction Ann Int Med 79:712-719,1973
16. Hull R, Hirsh J, Sackett DL et al:Replacement of venography in suspected venous thrombosis by impedance plethysmography and $I^{125}$ Fibrinogen leg scanning Ann Int Med 94:12-15,1981

# Multiple Myeloma and Adenocarcinoma of the Lung

RONALD TUNG, M.D., WILLIAM B. WHITE, M.D.
AND JAMES R. MCCORMICK, M.D.

**ABSTRACT—The rarity of reported cases of lung cancer developing in individuals with multiple myeloma prompted us to report this one of a 56-year-old man who had been treated for myeloma for more than three years before the onset of diffuse adenocarcinoma of lung. Because of its insidious and diffuse roentgenographic presentation, cytotoxic drug-induced pulmonary disease was initially considered the likely diagnosis. This case report underscores the necessity for including primary tumors of lung in the differential diagnosis of roentgenographically diffuse and localized opacities in patients being treated for myeloma and discusses the possible role of therapy in their development.**

The occurrence of second neoplasm in patients with multiple myeloma has been reported with variable frequency[1-4]. Of these, hematologic malignancies are the most important and may be related to prolonged chemotherapy[2]. Solid tumors, however, do occur, yet their prevalence as a group does not appear to be greater than that in the general population[4]. Carcinoma of the lung has been rarely associated with myeloma. In the present report a patient who developed adenocarcinoma of lung after four years of therapy for multiple myeloma is presented and the possible role of chemotherapy in its development is discussed.

## Case Report

A 52-year-old non-smoking custodian was admitted to the hospital in December 1974 for lumbar back pain and fever. An apparent pneumococcal pneumonia responded promptly to penicillin but he was found to be anemic, with bone marrow plasmacytosis (60%) and hyperglobulinemia (6.5 g/dl). Multiple myeloma, IgG (k) type, was diagnosed and he was treated with melphalan 20 mg daily and prednisone 50 mg tid for four days every four weeks. There was no apparent response to this therapy, yet his disease did not progress. Other than episodic fever and pulmonary infiltrates resolving with penicillin therapy, he felt relatively well except for mild lumbar pain and was able to continue working.

In April 1977 bone marrow examination demonstrated 50% plasma cells and there was a persistent serum M component by immunoelectrophoresis. Melphalan and prednisone were discontinued and he was begun on 100 mg of cyclophosphamide orally for 5 days each week.

In May 1978 the patient was readmitted because of a compression fracture of the 7th thoracic vertebra which was felt to be secondary to myeloma. Local radiation provided significant improvement. During that admission, chest roentgenogram revealed a diffuse increase in lung markings suggesting an interstitial process (Figure 1). This appeared to increase and was accompanied by cough and mild dyspnea with exertion. Pulmonary function studies showed a moderate restrictive defect and marked reduction in diffusing capacity (Table 1). Because he initially felt reasonably well, lacked fever and had no other evidence for an infectious process, it was felt that his pulmonary disease most likely resulted from cyclophosphamide therapy. The drug was discontinued and prednisone was begun with the intent of performing a lung biopsy should his symptoms persist or advance. He rapidly became more dyspneic, however, with persistent cough and the onset of right anterior chest pains. Chest roentgenogram showed progression of the infiltrate now accompanied by right middle lobe consolidation and extension to the pleura (Figure 2).

Bronchoscopy was considered but because of repeated episodes of thrombophlebitis in both lower extremities necessitating continuous anticoagulation, was not performed. Sputum cytology, however, demonstrated numerous malignant cells in clusters consistent with adenocarcinoma of lung (Figure 3) (interpreted by B. Gondos, M.D., Chairman, Department of Pathology, University of Connecticut Health Center). The patient died shortly thereafter; permission for an autopsy was not obtained.

## Discussion

There are several aspects of the above report which are worth noting. The onset of the patient's disease was attributed to cyclophosphamide initially; carcinoma was not considered likely in the differential diagnosis. It is possible that some degree of pulmonary alveolar

---

RONALD TUNG, M.D., Fellow, Pulmonary Medicine, University of Connecticut School of Medicine. WILLIAM B. WHITE, M.D., Resident, Internal Medicine, University of Connecticut, School of Medicine. JAMES R. MCCORMICK, M.D., Assistant Professor of Medicine, University of Connecticut School of Medicine, Farmington, CT; Chief, Pulmonary Division, Newington Veterans Administration Medical Center, Newington, CT.

Reprint requests to: Department of Internal Medicine, The University of Connecticut Health Center, Farmington, CT 06032 (Dr. McCormick).

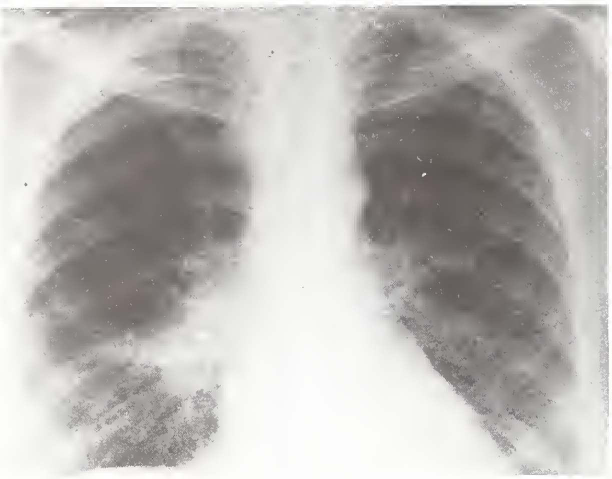


Figure 1
Chest X-ray of the patient when infiltrate was initially discovered. There are bilateral, interstitial radioopacities radiating out from both hila.

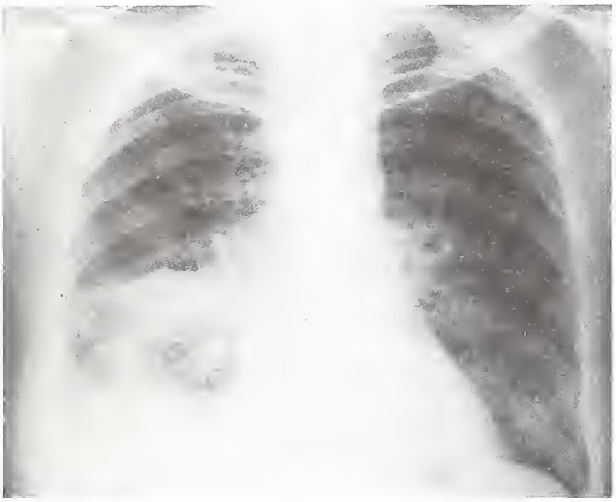


Figure 2
Chest X-ray four months later reveals progression of the infiltrate especially on the right side. In addition, the right middle lobe is now partially consolidated, and there is obscuration of the ipsilateral disphragm.

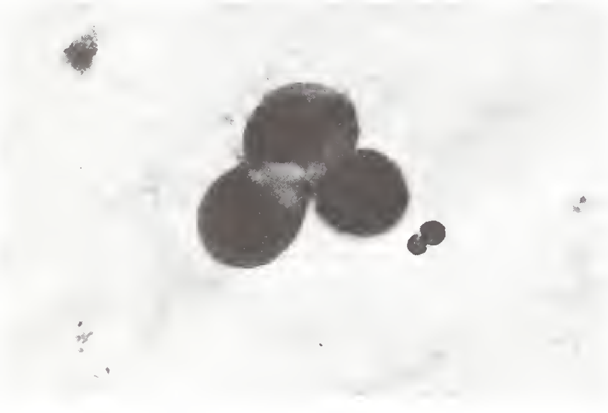


Figure 3
Cluster of malignant cells with intracytoplasmic vacuoles from sputum cytology specimen suggestive of adenocarcinoma. Papanicolaou stain, X430. (Interpreted by B. Gondos, M.D., Chairman, Department of Pathology, University of Connecticut Health Center.)

Table 1
PULMONARY FUNCTION STUDIES

| | *6/78* | | | *10/78* | |
|---|---|---|---|---|---|
| | *Predicted* | *Actual* | *%* | *Actual* | *%* |
| FVC, liters | 4.38 | 2.63 | 60 | 2.72 | 62 |
| TLC, liters | 6.44 | 4.32 | 67 | 3.96 | 61 |
| DLCO, $\frac{\text{ml}}{\text{min-Torr}}$ | 18.1 | 8.8 | 49 | 6.8 | 38 |

FVC - forced vital capacity
TLC - total lung capacity
DLCO - diffusing capacity for carbon monoxide, single breath method

injury was related to cytotoxic drug therapy and could explain the depressed diffusing capacity and reduction in lung volumes[5]. To what degree this occurred cannot be determined from the available data.

Despite the lack of biopsy or autopsy confirmation of the malignancy in the lung, we believe the diagnosis is correct because of the roentgenographic changes of middle lobe consolidation with pleural extension, the presence of migratory thrombophlebitis, and the observation of malignant cells in the sputum at a time when there was no clinical evidence of a primary tumor elsewhere.

There have only been eight reported cases of lung cancer in individuals with multiple myeloma [1, 4, 6 - 9]. As shown in Table 2, most patients were elderly males. Myeloma types included IgA and IgG, kappa or lambda light chains. Although squamous cell carcinoma was the most frequent cell type, oat cell and adenocarcinoma were also seen. In four cases[1, 4, 9], the carcinoma was discovered subsequent to the diagnosis of myeloma, within a period of time ranging from 20 to 69 months. All had been receiving chemotherapy and there were no apparent distinguishing characteristics in relation to carcinoma cell type or class of myeloma protein.

Our patient received melphalan and prednisone initially, followed by cyclophosphamide for the one year preceding the diagnosis of lung cancer. Melphalan has rarely been associated with clinically evident pulmonary fibrosis[10] but focal and generalized atypical epithelial hyperplasia has been described[11]. This suggests that subtle injury to the alveolar and bronchiolar epithelial cells does occur with greater frequency than is clinically appreciated. Cyclophosphamide, of course, is well recognized as a cause of diffuse interstitial and alveolar fibrosis with proliferation of atypical epithelial cells[5, 12, 13]. Alveolar cell carcinomas have been described in a number of individuals with idiopathic pulmonary fibrosis and fibrosis associated with systemic collagen disease[14] and have been postulated to arise from the metaplastic epithelial cells so characteristically seen in these disorders. It is possible that progressive, subclinical injury to the lung by cytotoxic drugs with resultant mild fibrosis and cellular atypia could eventuate in the production of a carcinoma.

Table 2
REVIEW OF THE LITERATURE

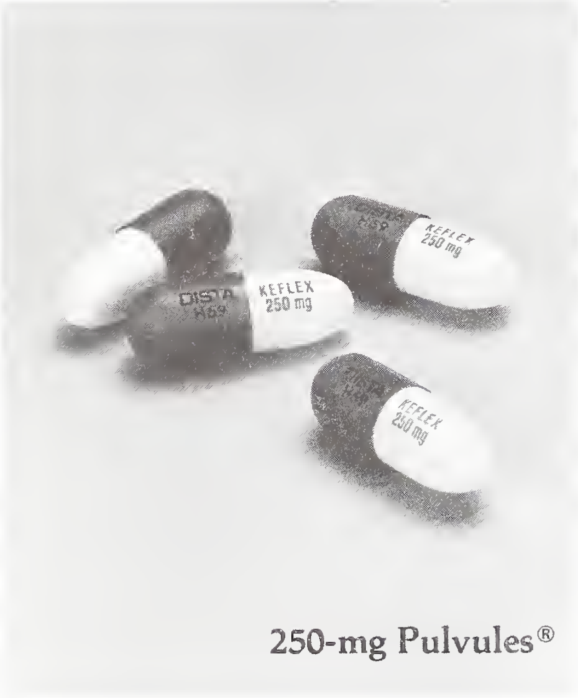
| *Cas* | *Ref.* | *Age, Sex* | *Type of Lung Ca* | *Relation to Myeloma* | *Chemotherapy* | *Protein Type* | *Comments* |
|---|---|---|---|---|---|---|---|
| 1 | 6 | Unknown age M | Squamous | Concomitant presentations | Urethane | No details, but "studies for MM were conclusive" | No post. Ca proven by upper lobectomy. |
| 2 | 6 | 67 M | Squamous | Preceded MM by 2 years | None | IgA, lambda | Lung Ca initially irradiated (5300 r) but spread to hilum Also had adenoCa of cecum. |
| 3 | 8 | 72 M Truck driver | Bronchogenic, undifferentiated | Preceded MM slightly; almost concomitant | melphalan | IgG | Post: Metastatic disease in lung, bone, adrenals |
| 4 | 7 | 60 M Truck driver | Oat cell | Preceded MM by 1 year | melphalan, prednisone | IgA | Post: Metastatic disease in hilar nodes and lung |
| 5 | 1 | 75 M | Adenocarcinoma with pleural effusion | Occurred 5 years after MM | Melphalan, prednisone, local radiation to lower back | IgA, kappa | Post: "infiltrating adenocarcinoma of the lung" |
| 6 | 9 | Unknown | Squamous | 20 months after MM | melphalan, prednisone | IgG | No further details given |
| 7 | 4 | 64 M | Not given | 14 months after MM | melphalan, prednisone | lambda light chain only | Second cancer confirmed at autopsy. |
| 8 | 4 | 61 M | Not given | 69 months after MM | melphalan, prednisone, procarbazine | IgA, lambda | Second cancer confirmed at autopsy. |

This hypothesis will require careful study in the future as longer survivals with cancer increase the numbers of individuals receiving these drugs for prolonged periods of time. Whatever the pathogenesis of the lung tumor, this case draws attention to the necessity for including carcinoma in the differential diagnosis of roentgenographically diffuse and localized infiltrations in persons with multiple myeloma.

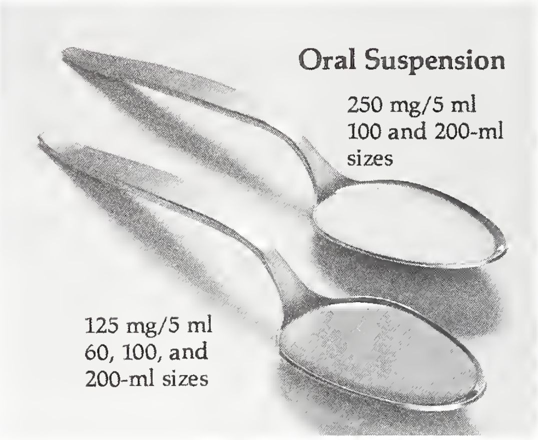
## REFERENCES

1. Blom J, Law IP: Second malignancies in patients with multiple myeloma. Oncology 34:20-24, 1977
2. Rosner F, Grunwald H: Multiple myeloma terminating in acute leukemia. Am J Med 57:927-939, 1974
3. Weitzel RA: Carcinoma coexistent with malignant disorders of plasma cells: Autopsy survey. Cancer 11:546-549, 1958
4. Stegman R, Alexanian R: Solid tumors in multiple myeloma. Ann Int Med 90:780-782, 1979
5. Sostman HP, Matthay RA, Putnam CE: Cytotoxic drug-induced lung disease. Am J Med 62:608-614, 1977
6. Hosley HF: M-proteins, plasmacytosis, and cancer. Cancer 20:295-307, 1967
7. Smith AG, Cumming RLC: Multiple myeloma and oat cell carcinoma. J Clin Pathol 30:1053-1055, 1977
8. Sparangana M: Multiple myeloma with pulmonary lesions. Postgrad Med 67:209-213, 1970
9. Mohindra RK, Al-Sarraf M: Monoclonal gammapathy, multiple myeloma and cancer. Oncology 35:107-111, 1978
10. Codling BW, Chakera TMH: Pulmonary fibrosis following therapy with melphalan for multiple myeloma. J Clin Pathol 25:668-673, 1972
11. Taetle R, Dickman PS, Feldman PS: Pulmonary histopathologic changes associated with melphalan therapy. Cancer 42:1239-1245, 1978
12. Patel AR, Slah PC, Rhee HL, et al.: Cyclophosphamide therapy and interstitial pulmonary fibrosis. Cancer 38:1542-1548, 1978
13. Rodin AE, Haggard ME, Travis LB: Lung changes and chemotherapeutic agents in childhood. Report of a case associated with cyclophosphamide therapy. Am J Dis Child 120:337-340, 1970
14. Talbott JH, Barrocas M: Progressive systemic sclerosis (PSS) and malignancy, pulmonary and non-pulmonary. Medicine 58:182-207, 1979

# easy to take



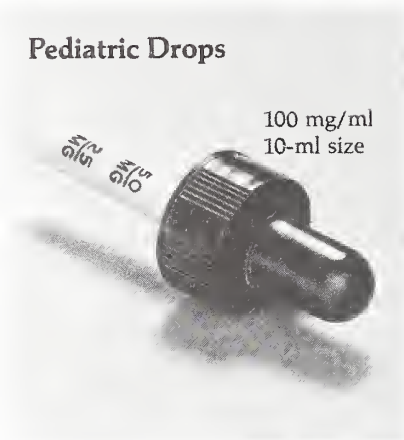
250-mg Pulvules®



Oral Suspension

250 mg/5 ml
100 and 200-ml
sizes

125 mg/5 ml
60, 100, and
200-ml sizes



Pediatric Drops

100 mg/ml
10-ml size

**Keflex®**
**cephalexin**

Additional information available
to the profession on request.

DISTA

000823

**Dista Products Company**
Division of Eli Lilly and Company
Indianapolis, Indiana 46285
Mfd. by Eli Lilly Industries, Inc.
Carolina, Puerto Rico 00630

# Nocturnal Penile Tumescence (NPT)

ALAN J. WABREK, M.D.

**ABSTRACT**—Penile erections occur consistently during rapid eye movement (REM) sleep in healthy males between three and 79. Two mercury-filled strain-gauges, around the proximal and distal shaft of the penis respectively, accurately detect changes in penile circumference. These changes are recorded, in a sleep laboratory, concomitantly with other physiological parameters that allow for evaluation of the stage and normality of sleep. During an episode of maximum tumescence, penile rigidity is evaluated by a rigidometer. To date, our findings indicate that penile rigidity of less than 100 mmHg is insufficient for vaginal penetration.

Nocturnal penile tumescence (NPT) monitoring is the only objective way to differentially diagnose impotence. If psychogenic, NPT and penile rigidity are normal for age; if organic, one or both parameters is decreased.

## Background

The occurrence of penile erections during sleep, in 3 to twenty week-old infants, was first reported by Halverson[1] in 1940. Ohlmeyer, Brilmayer and Hullstrung[2,3] first described penile erections during sleep in adults. They studied six males between twenty and forty and found that during sleep erections occurred on an average of every eighty-five minutes and lasted an average of twenty-five minutes. During a sleep period of approximately seven and one half hours, three or four erectile episodes would occur. This phenomenon is called nocturnal penile tumescence (NPT). Additional studies in the late 1940s revealed that erection cycles also occurred during daytime sleep with about the same characteristics as observed during nighttime sleep.

In 1953 Aserinsky[4] observed, quite serendipitously, that rapid eye movement occurred periodically during the sleep of infants. Subsequently, Aserinsky and Kleitman[5] and Dement and Kleitman[6] reported that these bursts of bilaterally synchronous, conjugate, rapid eye movements (REMs) occurred both vertically and horizontally during a physiologically unique period of sleep. The characteristic stage 1 EEG pattern, plus the characteristic electrooculogram (EOG) of REM, was also highly correlated with a sleeper's recall of dream experiences.

If awakened during REM sleep, individuals are much more likely to report dreams than if awakened during non-REM sleep. Aserinsky also observed that the length and cyclicity of nocturnal erections - as described by Ohlmeyer - resembled closely the parameters of REM sleep. It was not until 1962 that an attempt was made to directly relate NPT and REM. Oswald[8] studied the temporal relationship between stage 1 - REM and the erection phenomena, and found that

> Preliminary studies . . . on some volunteer males using an apparatus not noticeable in use, indicated that erections only accompanied some dream periods and could come and go briefly during a given period.

Technical difficulties prevented him from demonstrating whether or not erections occurred during non-REM sleep. Fisher and his associates[9] reported that they had never seen erections during non-REM (NREM) stages of sleep except in the few minutes preceding and following the rapid eye movement periods. Unlike Oswald, who found that tumescence can come and go briefly during a given period, Fisher et al noted sustained tumescence in a majority of cases throughout the duration of even lengthy REM periods. They also found that 95 percent of the 86 REM periods they observed in young males were accompanied by tumescence, while Karacan et al[10] found that 80

---

ALAN J. WABREK, M.D., Director Medical Sexology, Hartford Hospital, Hartford, Ct; Associate Professor, Department OB/GYN, University of Connecticut School of Medicine, Farmington, CT.

percent of 237 REM periods in young males were accompanied by tumescence. A high degree of correlation between REM and penile tumescence thus existed. These findings have subsequently been confirmed by Jovanovic[11] and Kahn and Fisher[12].

### Strain Gauges

One of the early problems was that while REM could be easily measured, there was not an effective strain gauge transducer that could easily measure NPT. Ohlmeyer had originally used a contact ring which was fitted around the penis. When a penile erection reached a certain minimum degree, the electric current was broken and the response recorded as an indentation on a Kymographic tracing. Figure 1 from Ohlmeyer et at[2] in 1944 demonstrates the erection cycle during five different nights. The horizontal lines represent sleep periods; the erections, during sleep, are represented as downward indentations between the vertical lines. From the time scale at the bottom of Figure 1, it is apparent that during sleep periods of six to six and one-half hours there were either three or in the last case four NPT episodes.

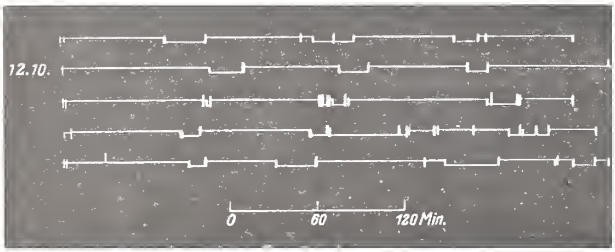


Figure 1
Kymographic tracing of NPT episodes on five different nights.

Although Ohlmeyer recorded NPT episodes for the first time, only the presence or absence of a minimum degree of tumescence could be noted; it did not allow for the dynamic quantitative changes in tumescence to be recorded.

Fisher,[9] in a first attempt to quantitate the degrees of NPT, devised a polyvinyl tube about the size and shape of a doughnut. The tube was filled with water and fitted around the base of the penis. During an erection, pressure would be exerted on the inner surface of the tube causing the water level to rise in a smaller, attached tube. The column of water could easily be observed and measured. Criticism of this first phalloplethysmograph centered around its size, bulk, and that erections could result from local stimulation by the device.

A second method involved the measurement of changes in the skin temperature of the penis during erection.[9] With full erections, and the increased arterial flow into the cavernous spaces, penile skin temperature can increase as much as three degrees fahrenheit (3F) over the flaccid state. A thermistor, consisting of a special alloyed thin resistance wire which had the property of varying its resistance as a function of the temperature, was used for the all-night recordings. Its small size ruled out, in large degree, the factor of local stimulation of the penis, but it was unable to quantatatively detect, in a precise way, the degree of tumescence.

Freund[13] constructed a glass cylinder which fit over the penis and was connected to a volumetric instrument. The device was too cumbersome to use in evaluating NPT with sleeping subjects.

In the early 1960s Shapiro[14] adapted a commercially available mercury strain gauge for the measurement of penile erections. It consisted of silicone elastic tubing that was filled with mercury under pressure and sealed at both ends with platinum electrodes.

Electrically, the mercury-filled strain-gauge forms one leg of a wheatstone bridge circuit, thereby enabling minute variations in resistance as the tubing is stretched during erection to be amplified and recorded on the DC circuit.

The one potential defect, a bulky junction around the electrode leads, was modified by Karacan[15] in the late 1960s. The modified mercury strain-gauge has proven to be an adequate transducer that dynamically indicates quantitative changes in penile circumference during sleep.

### Six Characteristics of NPT

1. NPT occurs consistently in healthy males between the ages of three and seventy-nine.[16]
2. Eighty to ninety percent of REM periods are accompanied by erections of greater or lesser degree.
3. NPT occurs every 90 to 100 minutes during a normal night's sleep, and lasts an average of 20 to 40 minutes per episode.
4. The quantity of NPT is related to age. In adolescence, NPT constitutes 32 percent of total sleep. It remains at this level until approximately age forty, then declines gradually to about 20 percent for a male in his 60's.[17]
5. The quality of NPT is also age-related. During adolescence, there are approximately 90 minutes of full erection during a night's sleep; in middle age, about 45 minutes; and in the 70s, about 20 minutes.
6. Both REM and NPT are more prominent in the latter portion of a normal night's sleep than the earlier portion.

The working assumption for the clinical use of NPT in the differential diagnosis of impotence is that an impotent male with a normal NPT for age has a psychogenic etiology for the dysfunction. Either no NPT or partial NPT, in the presence of a normal night's sleep, indicates organic etiology for the impotence. These assumptions have been derived from the study of several thousand subjects.[18]

### Monitoring Procedure

NPT monitoring and evaluation is most accurately done in a sleep laboratory or clinic. Various physiological functions are monitored, including two electroencephalogram (EEG) channels, two electromyogram (EMG) channels, respiration, electrocardiogram (EKG), two eye movement or electrooculogram channels (EOG) and two nocturnal penile tumescence (NPT) channels. The two strain-gauges on the penis, around the proximal and distal portions of the shaft, are electrically connected to the NPT monitoring unit (American Medical Systems - Minneapolis) which in turn feeds into channels 9 and 10 of the EEG machine. All other physiological functions are monitored directly from the patient. The EEG and EOG channels allow for proper evaluation of the stage, quantity and quality of sleep. It is necessary to demonstrate that a normal night's sleep with REM episodes has occurred for proper NPT evaluation.

A mercury filled strain gauge is shown in Figure 2.

Before being positioned, calibration is necessary. Since channels 9 and 10 record NPT on curvolinear paper, it is very helpful to have the channels calibrated so that a 1 mm increase in penile circumference will produce and be recorded as a 1mm downward deflection of the pen. This enables the male technician to quickly determine the exact degree of tumescence by looking at the tracing paper. After the patient has gone through several REM-NPT episodes, maximum tumescence can be clearly and easily identified. During a period of maximum tumescence - usually between 5 A.M. and 7 A.M. - it is necessary to assess penile rigidity. Experience has shown that even though there may be a significant increase in penile circumference during a tumescence episode, there may not be sufficient rigidity to allow for vaginal penetration. Karacan[19] has developed a device to measure penile rigidity which has been modified by Wabrek. The modified rigidometer is shown in Figure 3.

During maximum tumescence, the hollowed-out teflon cap, attached to the end of the plunger, is placed over the glans penis. Downward pressure is applied to determine if and when the erect penis buckles. The entire evaluation takes less than 30 seconds and is minimally disruptive to the monitoring.

Nobody knows exactly how much penile rigidity is necessary for penetration. Obviously it depends in part on vaginal parity and lubrication. From the sexual histories of patients, it seems that there are problems if penile rigidity is less than 100 mmHg and few to no problems if greater than 125 mmHg.

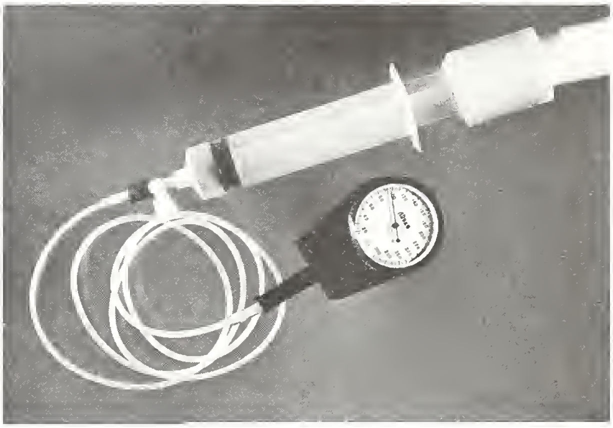
### Tracings

A NPT tracing is shown in Figure 4.

The two EOG channels demonstrate REM: the EMG channel from the submental musculature shows the characteristic low level activity and tone. Penile tumescence has started; the increase in the circumference of the distal shaft is 5 mm and of the base 11 mm.

NPT increases in a characteristic fashion as shown in Figure 5.

Bursts of activity in the bulbocavernosus muscle - as recorded on channel 3 - slightly precede and then coincide with a volumetric increase in penile circumference as recorded on channels 9 and 10. The increase in



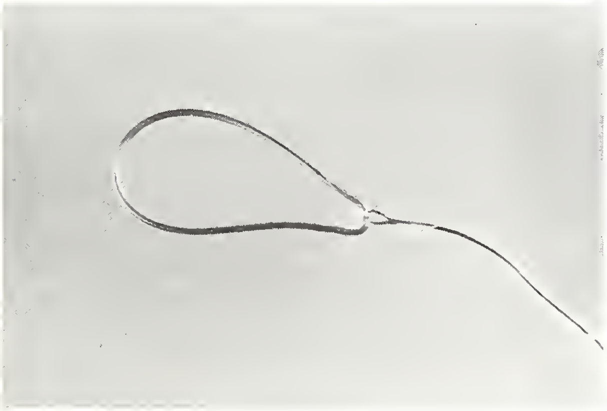


Figure 2
Mercury filled strain gauge.

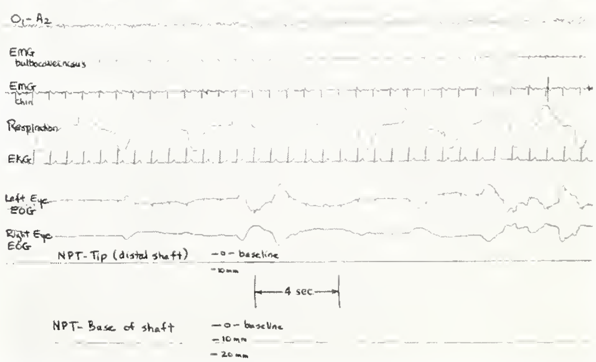


Figure 4
NPT tracing.

penile circumference occurs in both the distal and proximal portions of the penile shaft, with the most pronounced changes occurring in the base.

An abnormal NPT tracing is shown in Figure 6.

The tracing on channels seven and eight demonstrates REM sleep, while the tumescence channels show only a two mm increase in the penile circumference, certainly not sufficient for penetration. Of particular interest is the burst of EMG activity recorded from the bulbocavernosus muscle. When bulbocavernosus (and ischiocavernosus) muscle activity occur during REM sleep, and penile tumescence does not increase, interference with the arterial supply to the penis is strongly suspected. Penile blood pressure, doppler studies of the penile arteries and internal pudendal arteriography will further evaluate the arterial inflow.

Since men and women began having intercourse, impotency has caused a great deal of suffering for both. With continued experience, the causes of impotence are becoming better understood. Nocturnal penile tumescence (NPT) monitoring is an important step in differentiating organic from psychogenic problems. By clarifying the diagnosis, treatment options become clear and some of the suffering can be relieved.

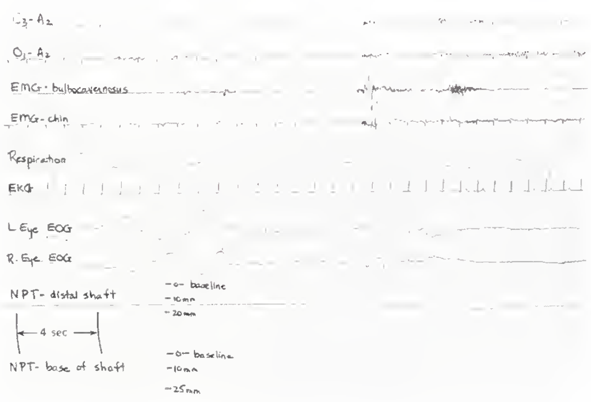


Figure 5
Contraction of bulbocavernosus muscle coinciding with volumetric increases in penile tumescence.

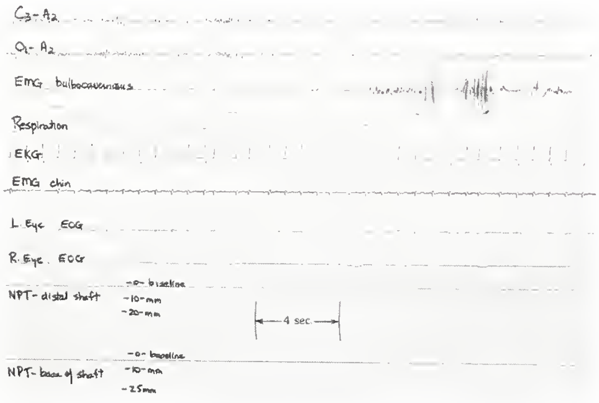


Figure 6
Abnormal NPT

REFERENCES

1. Halverson HM: Genital and sphincter behavior of the male infant. J Genet Psychol 56:95, 1940

2. Ohlmeyer P, Brilmayer H, Hullstrung H: Periodische vorange im schlaf. Pfleugers Arch 248:559, 1944

3. Ohlmeyer P, Brilmayer H: Periodische vorgange im schlaf II Mitteilung. Pfleugers Arch 249:50, 1947

4. Aserinsky E: Ocular motility during sleep and its application to the study of rest activity cycles and dreaming. Chicago University of Chicago, Department of Physiology, 1953 (doctoral dissertation)

5. Aserinsky E, Kleitman N: Two types of ocular motility occurring in sleep. J Appl Physio 8:1, 1955

6. Dement W, Kleitman N: Relation of eye movements during sleep to dream activity: Objective method for study of dreaming. J Exp Psychol 53:339, 1957

7. Dement W, Kleitman N: cyclic variations in EEG during sleep and their relation to eye movement. Electroencephalogr Clin Neurophysiol 9:573, 1957

8. Oswald I: Sleeping and waking, Physiology and Psychology, New York Elsevier Publishing Co 142, 1962

9. Fisher C, Gross J, Zuch J: cycle of penile erections synchronous with dreaming (REM) sleep. Arch Gen Psychiatry 12:29, 1965

10. Karacan I, Goodenough DR, Shapiro A, Starker S: Erection cycle during sleep in relation to dream anxiety. Arch Gen Psychiatry 15:183, 1966

11. Jovanovic U: Erectionen im schlaf. Archiv fur Psychiatrie und Nerven Krankeiten 210:220, 1967

12. Kahn E, Fisher C: REM sleep and sexuality in the aged. J Geriatr Psychiatry 2:181, 1969

13. Freund K, Sedlacek F, Knob K: A simple transducer for mechanical plethysmography of the male genitals. J Exp Anal Behav 8:169, 1965

14. Shapiro A: Physiological characteristics of REM periods and related kinds of sleep. Paper presented at the Association for the Psychophysiological Study of Sleep. Palo Alto CA, March 1964

15. Karacan I: A simple and inexpensive transducer for quantitative measurements of penile erection during sleep. Behav Res Meth Instru 1(7):251, 1969

16 Karacan I, Williams RL, Thornby JI, Salis PJ: Sleep-related penile tumescence as a function of age. Am J Psychriatry 139:932, 1975

17. Fisher C: Impotence; What can be done. Diabetes Forecast 31:8, 1978

18. Fisher C, Sciavi R, Lear H, Edwards A, Davis D, Witkin A: The assessment of nocturnal REM erection in the differential diagnosis of sexual impotence. J Sex Mar Ther 1:277, 1975

19. Karacan I, Ilaria R: Nocturnal penile tumescence (NPT): The phenomenon and its role in the diagnosis of impotence. Sexuality and Disability 1:260, 1978

# Important Advances in Clinical Medicine

## Epitomes of Progress—Radiology

### Cholescintigraphy: Hepatobiliary Imaging With IDA Derivatives Labeled With Technetium 99m

A new group of radioactive pharmaceutical agents for hepatobiliary imaging are the N-substituted iminodiacetic acid (IDA) derivatives labeled with technetium, which were first synthesized and reported in 1975. These compounds are structurally related to lidocaine and, when reacted with technetium 99m, show good extraction by the liver and rapid excretion into the bile. Several IDA derivaties (such as HIDA [dimethyl-IDA], PIPIDA [para-isopropyl-IDA] and diethyl-IDA) are now in use for diagnostic imaging.

The normal time sequence of an IDA scan depends somewhat on the specific product used but may be generalized as follows: After intravenous injection of 5 to 10 mCi of the agent in a human who has fasted for 2 to 12 hours, an immediate *blood-pool phase* is seen during the first 30 to 60 seconds. By three to five minutes blood clearance is almost complete and the *early hepatic parenchymal phase* has peaked. The *renal excretory phase* occurs from about 15 to 30 minutes after injection. *Bile ducts* are seen best from about 10 to 20 minutes after injection, and the descending portion of the *duodenum* may be seen from about 20 to 30 minutes. The *gallbladder phase* occurs from 13 to 60 minutes postinjection in adequately fasted, normal patients; however, if the patient has *not* fasted before examination, gallbladder exclusion has been described and may result in a falsely abnormal study. A routine study includes views of the liver and biliary tree area at 1, 5, 15, 30, 45 and 60 minutes. Computer acquisition and processing of images are not usually necessary, unless gallbladder emptying in response to cholecystokinin is to be studied. If an abnormal result is apparent within the first hour, it may be necessary to continue intermittent imaging for two to five hours following injection and, possibly, a 24-hour delayed view may help to detect presence of any bowel activity.

Clinical indications for hepatobiliary imaging include the following: (1) The differential diagnosis of obstructive jaundice; (2) diagnosis of biliary atresia in infants; (3) evaluation of biliary drainage pathways and intestinal bile flow post-operatively and determining the presence of biliary reflux; (4) assessment of hepatobiliary structure and function in cold areas on the technetium 99m sulfur colloid (liver and spleen) scan, and (5) determination of cystic-duct patency in cases of suspected acute cholecystitis.

The success of the IDA derivatives in the differential diagnosis of obstructive jaundice depends on the degree of hyperbilirubinemia. With HIDA and PIPIDA, adequate visualization of the hepatic parenchyma and biliary tract structures has been reported with serum bilirubin levels of up to 5 to 8 mg per dl; higher bilirubin levels have produced variable and unpredictable results. The newer agents have shown potential for demonstrating biliary ducts at much higher bilirubin levels and may prove superior in further investigation of jaundice. Scintigraphic diagnosis of infant biliary atresia may also relate to the bilirubin level and the age of the patient at the time of examination. Infants with atresia studied before 3 months of age have been reported to show good hepatocyte clearance but no bile flow into the bowel; older infants showed poor hepatocyte clearance as well as no bile flow. In newborns with hepatitis, variable degrees of hepatocyte clearance were seen, but intestinal activity was usually demonstrated.

In acute complete extrahepatic obstruction, where hepatocellular function is still relatively intact, the study may show the following: abrupt cutoff of activity at the level of obstruction; dilated bile ducts; retention of the radioactive pharmaceutical agent in the liver and hepatic ducts, with no excretion into the common bile duct or duodenum, or prolonged retention and *no* ductal visualization. With a patent cystic duct, the gallbladder will be visualized and may show intense accumulation of activity over time, because the agent cannot exit into the bowel.

Hepatobiliary imaging of bile flow patterns and bile duct anatomy has also been found useful in evaluating congenital, postoperative or posttraumatic abnormalities. The cholescintiscan can demonstrate the caliber and functional patency of an anastomosis; define the preferential route of bile flow as well as the rate of flow; detect bile leakage and assess its extent and course, and visualize cystic duct remnants. Scintiscans have also been found useful in evaluating the response to medical or surgical treatment; in detecting bile leaks secondary to traumatic disruption of the biliary tract, and in diagnosing congenital cystic dilatation of the biliary tree, involving either the intra- or extrahepatic ducts.

The most widely accepted application of cholescintigraphy, however, is in the differential diagnosis of acute cholecystitis. The procedure has a reported 95 percent sensitivity, 100 percent specificity, and 98 percent accuracy for detecting cysticduct obstruction in patients with acute abdominal pain.

Kathryn F. Witztum, M.D.

REFERENCES

Wistow BW, Subramanian G, Heertum RL, et al: An evaluation of $^{99m}$Tc-labeled hepatobiliary agents. J Nucl Med 18: 455-461, May 1977

Rosenthall L, Shaffer EA, Lisbona R, et al: Diagnosis of hepatobiliary disease by $^{99m}$Tc-HIDA cholescintigraphy. Radiology 126: 467-474, Feb 1978

Weissman HS, Frank M, Rosenblatt R, et al: Cholescintigraphy, ultrasonography and computerized tomography in the evaluation of biliary tract disorders. Semin Nucl Med 9: 22-35, Jan 1979

Rosenthall L, Fonseca C, Arzoumanian A, et al: $^{99m}$Tc-IDA hepatobiliary imaging following upper abdominal surgery. Radiology 130: 735-739, Mar 1979

## CT Evaluation of Lymphoma

Abdominal and pelvic computed tomography (CT) is being used with increasing frequency in the initial evaluation of patients with Hodgkin disease (HD) and non-Hodgkin lymphoma (NHL). Data regarding the accuracy of this technique in assessing subdiaphragmatic disease indicate distinct advantages compared with other imaging techniques and a few disadvantages. Information derived from surgical staging procedures remains superior, but there is a growing trend toward selectively replacing operative techniques.

*Spleen and liver.* CT provides relatively accurate correlative data on organ size; however, spleen and liver size bears little correlation to absence or presence of disease, unless these organs are substantially enlarged, a condition usually recognized by palpation. Occasionally, defects of lower attenuation coefficient are seen which correlate with tumorous nodules. Usually, however, tumor involvement of these organs is manifested as nodules smaller than 1 cm, which is beyond the resolving ability of CT scanners at present.

*Retroperitoneal and pelvic lymph nodes.* Lymphography is more accurate than CT in evaluating those lymph nodes which are opacified because it permits evaluation of derangements of architecture in normal or minimally enlarged nodes. However, CT visualizes other node groups (such as celiac axis, splenic hilum, porta hepatis) and can demonstrate disease when these nodes become enlarged.

*Mesenteric nodes.* These nodes, involved in greater than 55 percent of NHL, are usually bulky and readily seen with CT. Conversely, involvement is present in less than 4 percent of HD and, often, these involved nodes are normal in size. Thus, CT is useful in evaluating patients with NHL but not HD for mesenteric lymphadenopathy.

*Bone and bone marrow.* Percutaneous bone marrow biopsy is the procedure of choice to evaluate the marrow. With *bone* involvement, CT more clearly defines the extent of extraosseous disease compared with bone radiography and nuclear medicine scans.

CT provides excellent information regarding the anatomic extent of bulky disease, which is often important in treatment planning. Evaluation of patients after treatment with follow-up CT scans provides reliable evidence of response to treatment and evaluation of those in whom relapse of disease is suspected.

Ronald A. Castellino, M.D.

REFERENCES

Breiman RS, Castellino RA, Harell GS, et al: CT-pathologic correlations in Hodgkin's disease and non-Hodgkin's lymphoma. Radiology 126: 159-166, Jan 1978

Best JJK, Blackledge G, Forbes W, et al: Computed tomography of abdomen in staging and clinical management of lymphoma. Br Med J 2: 1675-1677, Dec 16, 1978

## CT Evaluation of Pulmonary Metastatic Disease

Computed tomography (CT) is capable of showing pulmonary nodules invisible on plain radiographs and standard whole lung tomograms. Therefore, CT has been used extensively for the diagnosis of pulmonary metastatic disease.

In general, nodules 3 mm to 6 mm in diameter can be seen with CT, while only those greater than 6 mm in diameter are visible using conventional tomography. In several series of patients with metastatic pulmonary nodules, CT showed more nodules than conventional tomography in a third to a half of patients.

Although its absolute spatial resolution is less than that of plain radiographs, CT's superior density resolution and the absence of overlying structures (as on plain films) or tomographic blur (as on conventional tomograms) enhances the detectability of lung nodules.

The cross-sectional image format of CT is also helpful in showing lung metastatic lesions. In pathological studies, it has been shown that a large percentage of metastatic deposits within the lung are subpleural. These lesions are difficult to see using conventional radiographic studies unless projected in tangent; this is not the case when using CT. Similarly, lesions near the hila or mediastinum as well as those located deep within a costophrenic sulcus may be missed using plain films and tomograms but are usually easily seen with CT.

In patients with suspected metastatic tumors, the detection of additional nodules using CT can affect treatment. In some patients, CT shows lung nodules when findings on plain radiographs and conventional tomograms appear normal; this is of obvious importance for the prompt institution of appropriate treatment. Also, in patients with lung nodules visible using standard techniques, CT may show additional nodules—information of value to the surgeon if excision of metastatic nodules is planned. Lastly, CT may show evidence of extrapulmonary (mediastinal or abdominal) metastatic lesions that would alter the therapeutic approach.

It must be emphasized, however, that not all pulmonary nodules seen in patients with a malignant tumor are metastatic deposits; some represent granulomas or normal subpleural lymph nodes. The smaller the nodule, the less likely it is to be a metastatic deposit regardless of the technique used to detect it. In one study, 60 percent of nodules detected by CT and not by conventional tomograms were not metastatic tumors; in other series, this percentage was lower. Although the frequency of such false-positive nodules detected by CT varies, it is clear that care must be taken in the diagnosis of pulmonary metastatic disease in patients with only one or two small nodules.

W. Richard Webb, M.D.

REFERENCES

Schaner EG, Shang AE, Doppman JL, et al: Comparison of computed and conventional whole lung tomography in detecting pulmonary nodules: A prospective radiologic-pathologic study. Am J Roentgenol 131: 51-54, Jul 1978

Muhm JR, Brown LR, Crowe JK, et al: Comparison of whole lung tomography and computed tomography for detecting pulmonary nodules. Am J Roentgenol 131: 981-984, Dec 1978

Mintzer RA, Malave SR, Neiman HL, et al: Computed vs. conventional tomography in evaluation of primary and secondary pulmonary neoplasms. Radiology 132: 653-659, Sep 1979

## Ultrasound Scanning in Gallbladder Disease

Recent technical advances in high-resolution real-time ultrasound scanners have greatly improved the speed and accuracy of diagnosis in gallbladder disease. Real-time sector scanners avoid most of the technical difficulties associated with conventional articulated-arm static scanners. As opposed to a cholecystogram (with orally given contrast medium), an ultrasound evaluation is not hampered by hepatic, biliary or gastrointestinal dysfunction. When carried out by an experienced ultrasonographer, the real-time technique is the examination of choice in patients with suspected gallbladder disease.

Real-time ultrasound scanning of the gallbladder has a sensitivity of 98 percent and a specificity of 95 percent for the diagnosis of cholelithiasis. Stones as small as 1 to 2 mm can be identified as shadowing echogenic foci within the gallbladder. Single, small gallstones within the gallbladder neck are the ones most often missed. Cholelithiasis does not, however, always infer acute cholecystitis and must be evaluated in view of the clinical history or confirmed by a biliary isotope scan.

Other types of gallbladder disease are easily evaluated by real-time ultrasonography. Pericholecystic fluid collections are easily identified and can serve as further evidence for acute cholecystitis in the proper clinical setting. Focal thickening of the gallbladder wall as seen with polyps or adenomyosis can be visualized. Diffuse thickening of the wall, though seen commonly in acute or chronic cholecystitis, is a nonspecific finding also associated with hypoalbuminemia and acute viral hepatitis.

Because a real-time ultrasound examination is equal in accuracy to a cholecystogram for the detection of gallstones, is independent of function, images all the organs surrounding the gallbladder and can detect abnormalities of the gallbladder wall, it should be considered our most versatile modality for gallbladder evaluation.

Charles E. Fiske, M.D.
Roy A. Filly, M.D.

REFERENCES

Cooperberg PL, Burhenne HJ: Real-time ultrasonography: Diagnostic technique of choice in calculous gallbladder disease. N Engl J Med 302: 1277-1279, Jun 5, 1980

Wolson AH, Goldberg BB: Gray-scale ultrasonic cholecystography. A primary screening procedure. JAMA 240: 2073-2075, Nov 3, 1978

Leopold GR, Amberg J, Gosink BB, et al: Gray scale ultrasonic cholecystography: A comparison with conventional radiographic techniques. Radiology 121: 445-448, Nov 1976

## Therapeutic Angiography

Refinements in angiographic technique and catheter technology have resulted in two important developments, percutaneous transcatheter embolic occlusion of vessels and transluminal angioplasty with percutaneous vascular dilatation.

Percutaneous vascular embolic occlusion was first used by Rösch in the treatment of upper gastrointestinal hemorrhage. The technique is now widely used in the nonsurgical obliteration of arteriovenous malformations of the head, neck, extremities and internal organs. It also is used in the treatment of splenic artery aneurysms; as a means of reducing tumor vascularity properatively, and for transhepatic obliteration of esophageal varices. It is under investigation for treatment of varicoceles.

Multiple embolic agents are used in this technique, including autologous blood clot, liquid silicone and particulate agents such as gelfoam, polyvinyl alcohol (Ivalon) and microshperes. All of these agents except autologous clot and gelfoam produce permanent occlusion. Mechanical devices are also used for permanent occlusion. Among these are Gianturco-Wallace-Anderson coils, detachable balloons, bristle brushes and expandable polyvinyl alcohol plugs. The mechanical devices offer an advantage over particulate agents because they avoid the risk of reflux of particles to other organs or the extremities.

In many cases, they are used in combination. The particulate agent initially occludes central small vessels and the mechanical device then occludes the larger feeding vessels. Most of these agents are commercially available while a few (such as cyanoacrylate glue) remain investigational.

Percutaneous vascular dilatation techniques were first shown to be feasible by Dotter, who used coaxial Teflon catheters for gradual dilatation. Today, transluminal angioplasty is done using Grüntzig balloon catheters, which are available with various balloon sizes. Proper selection of balloon size permits dilatation of arteries of varying caliber.

The technique has been successful with good long-term results in the dilatation of iliac, femoral and popliteal artery stenoses and in aortic dilatation. Recently it has been used in renal artery stenosis as an alternative to operating in the treatment of renovascular hypertension. It is also under investigation for dilatation of coronary artery stenosis or stenotic saphenous vein bypass grafts in selected patients.

Antoinette S. Gomes, M.D.

REFERENCES

Grace DM, Pitt DF, Gold RE: Vascular embolization and occlusion by angiographic techniques as an aid or alternative to operation. Surg Gynecol Obstet 143: 469-482, Sep 1976

Zeitler E, Grüntzig A, Schoop W: Percutaneous Vascular Recanalization: Technique, Application, Clinical Results. Berlin, Heidelberg, New York, Springer-Verlag, 1978

## Mammography: Who Needs a Mammogram?

Mammography is the most accurate noninvasive means of detecting breast carcinoma, especially very small lesions that are most amenable to cure.

*Diagnostic* mammography involves a one-time evaluation of patients with signs or symptoms that suggest the possibility of breast cancer. Specific indications include palpable mass, nipple discharge, skin or nipple retraction, focal skin thickening, nipple abnormalities suggesting Paget disease, unexplained axillary adenopathy and search for primary tumor site in women with documented metastasis. In these clinical settings, mammography can be very helpful in deciding whether and when biopsy should be done, in defining the extent of breast cancer if present and in evaluating asymptomatic areas in the ipsilateral and contralateral breast for clinically occult cancer. Clearly, diagnostic mammography is a high-yield procedure with substantial clinical benefit. Because only one examination is necessary, the radiation dose is very low and the carcinogenic risk is minimal. Because benefit exceeds risk by such a large margin, mammography is considered an essential part of the diagnostic evaluation of all symptomatic patients 30 years old and older.

*Screening* mammography involves repeated examination of totally asymptomatic patients. In this setting, mammography is instrumental in detecting many small lesions that otherwise would grow much larger and possibly become more widespread before the onset of clinical symptoms. The benefits of screening mammography do not exceed the presumed risk to the same degree as in diagnostic examinations because the yield of cancer is considerably lower in asymptomatic patients (reduced benefit) and because multiple examinations are needed, resulting in higher cumulative radiation dose (increased risk). Because neither benefit nor risk can be quantified precisely, there is disagreement over the proper role of screening mammography. However, it is generally accepted that because the risk of radiation-induced cancer is directly proportional to radiation dose, any reduction in dose is accompanied by a parallel decrease in risk. Therefore, the recent dose reductions for both xeromammography (0.4 to 1.0 rad breast tissue dose per examination) and screen-film mammography (0.05 to 0.15 rad per examination) make these techniques much more attractive now than several years ago. Fortunately, a consensus now exists, arguing for yearly screening mammography for the following: (1) all women over the age of 50, (2) women from the ages of 35 to 50 who are at high risk for the development of breast cancer (for example, breast cancer in a first-degree relative or a previous breast biopsy specimen that showed a premalignant lesion) and (3) all women in whom cancer has already developed in one breast, regardless of age, provided that there is no evidence of (incurable) metastatic disease. There is also widespread agreement that all women between 35 and 40 should have a single mammography examination to serve as a baseline for future comparison.

Edward A. Sickles, M.D.

REFERENCES

National Institutes of Health/National Cancer Institute Consensus Development Meeting on Breast Cancer Screening: Issues and Recommendations. J Natl Cancer Inst 60: 1519-1521, Jun 1978

Moskowitz M: Mammography in medical practice—A rational approach. JAMA 240: 1898-1899, Oct 20, 1978

Sickles EA: Xeromammography versus screen-film mammography: Pros and cons of the two techniques (Information). West J Med 134: 273-274, Mar 1981

Eddy D: American Cancer Society report on the cancer-related health check-up: Cancer of the breast. CA 30: 224-229, Jul-Aug 1980

## Applications of CT Scanning in Orthopedics

Computerized tomography (CT), originally introduced into clinical medicine for use in neuroradiology, now has been refined and adapted for scanning all parts of the body. Applications of CT in orthopedic radiology are under investigation.

In July 1978 the first article reporting the technique of CT investigation of the musculoskeletal system appeared in the *Journal of Bone and Joint Surgery*. This article stressed the value of CT scanning in the assessment of musculoskeletal tumors. The most obvious advantage to orthopedic surgeons lies in the unique ability of CT to clearly define the size and extent of soft tissue tumor masses before surgical treatment. The limits of bony involvement in malignant conditions also are assessed more accurately by CT than by conventional roentgenology, particularly with respect to extent of tumor in the medullary space.

CT scanning in skeletal trauma is not widespread. In most routine cases CT has no advantage over conventional radiography and may delay treatment because of the longer imaging time. However, in complicated pelvic and hip fractures, CT provides a picture of the relationship of fracture fragments far superior to that possible with conventional tomography. CT can show previously unsuspected acetabular fractures and intra-articular bony fragments in hip fractures.

In spinal examinations, CT is an adjunct procedure which can better define abnormal anatomy that has been identified using simpler methods such as plain films. CT will show the relationship of the vertebral body and posterior elements to the spinal canal and possible encroachment on the canal by bony fragments after spine trauma. Similarly, the relationship of inflammatory and tumor masses to the spinal canal can be evaluated better by CT than by conventional methods and the introduction of metrizamide may extend the diagnostic applications of computerized tomography in the spine.

The major limitations of spinal CT are related to the technique of examination. Scout view, tilting gantry and perhaps multiplanar reconstruction capabilities are necessary to diagnose subtle changes in degenerative disc and facet disease. Fourth generation machines with high-resolution capabilities are producing images with excellent anatomic detail within the spinal canal. Unfortunately, however, these are not generally available so that widespread application of CT diagnosis in these problems may be delayed.

Lawrence W. Bassett, M.D.
Anthony A. Mancuso, M.D.

REFERENCES

Schumacher TM, Genant HK, Korobkin M, et al: Computed tomography. Its use in space-occupying lesions of the musculoskeletal system. J Bone Surg 60: 600-607, Jul 1978

Lasda NA, Levinsohn EM, Yuan HA: Computerized tomography in disorders of the hip. J Bone Joint Surg 60: 1099-1102, Dec 1978

Roub LW, Drayer BP: Spinal computed tomography: Limitations and applications. Am J Roentgenol 133: 267-273, Aug 1979

## Thallium 201 Myocardial Imaging

Thallium 201 myocardial perfusion imaging has become a widely used noninvasive technique for differentiating normal, reversibly ischemic and irreversibly infarcted myocardial tissue. The thallous ion is thought to function as a potassium analog, and cellular uptake of the tracer therefore requires not only adequate regional myocardial perfusion, but also is dependent on the functional integrity of the sodium-potassium adenosine tri-phosphatase-activated pump, fueled with glucose by aerobic metabolism. Thus, in patients with coronary artery disease, areas of infarction or local tissue ischemia, or both, will show reduced thallium uptake and will appear as cold defects on scintigrams.

Because myocardial perfusion in the distribution of coronary arteries with high-grade stenoses may be essentially normal at rest, it has become customary to do thallium 201 scintigraphy in conjunction with exercise stress testing. Treadmill exercise is most commonly employed, although upright or supine bicycle stress has been used successfully. Regardless of the exercise technique employed, it is of paramount importance that the patient be brought to a true maximum, symptom-limited end point to achieve the highest possible heart rate and blood pressure measurement that is safe for the patient. Acceptable end points for stress scintigraphy include typical anginal chest pain, 2 mm or more flat or down-sloping ST segment depression of at least 0.08 seconds duration, severe fatigue, dyspnea or claudication. The importance of reaching maximal stress cannot be emphasized too strongly; it has, in fact, been shown that only 53 percent of the thallium perfusion defects detected after maximal exercise could be visualized after submaximal exercise.

A typical study protocol is as follows: The patient is connected to a routine twelve-lead electrocardiograph and an indwelling intravenous catheter is inserted into the arm. Graded levels of exercise are performed until fatigue or symptoms appear. The radioactive pharmaceutical agent is injected through the previously inserted intravenous catheter at the point of peak stress and exercise is continued for approximately 45 to 60 seconds to allow for initial thallium distribution. Following termination of exercise, a final multiple-lead electrocardiogram (ECG) is obtained, and the chest leads are then immediately removed to allow prompt commencement of imaging within less than three minutes after exercise. Continued ECG monitoring is maintained by the modified limb leads. It is important to obtain the initial image as early as possible because occasionally a stress-induced defect will "fill in" as early as 10 minutes following exercise. Myocardial perfusion defects (cold spots) seen on the immediate poststress images may be due either to reversible, stress-induced ischemia or to previous myocardial infarction which has resulted in scar. To distinguish between these entities, delayed or redistribution images are obtained three to six hours after the initial scintigrams. Defects on the immediate poststress images that show no significant change on the delayed redistribution views are assumed to represent scar. Conversely, defects present on the immediate poststress scintigrams that are normal on the delayed images indicate stress-induced, reversible ischemia.

Resting thallium 201 scintigrams have also been shown to be extremely sensitive for the diagnosis of acute myocardial infarction, with sensitivity approaching 100 percent within the first 6 to 12 hours after the onset of symptoms, at a time when the ECG or enzymes may not yet be diagnostic. While this technique cannot, in general, distinguish acute from old myocardial infarction, it can be very useful in making the diagnosis of non-cardiac chest pain in a patient with symptoms suggestive of acute myocardial infarction.

Thallium scintigraphy has also been found useful in the assessment of a coronary artery stenosis visualized on coronary angiography but which may be of equivocal hemodynamic significance. In this setting, a stress-induced reversible defect in the distribution of the artery in question is certain evidence that the lesion is physiologically significant. While a negative test finding does not rule out physiological significance of a coronary lesion, it does decrease the likelihood that significant stress-induced ischemia is occurring with similar levels of stress.

Many experts believe that thallium 201 scintigrams are among the most difficult images in nuclear medicine to interpret competently and consistently. Thus, this procedure is recommended only at those centers where suitable instrumentation and experienced practitioners allow for the strictest standards of quality control.

Kenneth Gerber, M.D.

REFERENCES

Pohost GM, Alpert NM, Ingwell JS, et al: Thallium redistribution: Mechanisms and clinical utility. Semin Nucl Med 10: 70-93, Jan 1980

Pierson RN Jr, Friedman MI, Tansey WA, et al: Cardiovascular nuclear medicine: An overview. Semin Nucl Med 9: 224-240, Oct 1979

Botvinick EH, Dunn RF, Hattner RS, et al: A consideration of factors affecting the diagnostic accuracy of thallium-201 myocardial perfusion scintigraphy in detecting coronary artery disease. Semin Nucl Med 10: 157-167, Apr 1980

Hamilton GW: Mycardial imaging with thallium-201: The controversy over its clinical usefulness in ischemic heart disease. J Nucl Med 20: 1201-1205, Nov 1979

## Computed Tomography of the Spine and Spinal Contents

Recent developments in computed tomography (CT) have made it possible to carry out consistent diagnostic spinal CT. The current CT scanners allow for accurate localization of the level of section by a cursor with appropriate gantry angulation for the area under study. For example, in evaluating the intervertebral disc spaces, it is possible to angle the gantry through the interspace without including adjacent bony structures. Gantry angulation is also of value in obtaining scans of areas of previous operations or trauma without metallic or other high-density hardware.

Third and fourth generation scanners obtain greater detail within the bony spinal canal. Thinner sections with increased spatial and density resolution produce images with increased anatomic detail. Thin sections (1.5 mm or less) are used to define small nerve roots, vessels and ligaments in the spinal canal.

While newer body scanners produce images in 10 seconds or less, the maximum surface dose per slice is approximately 5 to 7 rads, depending on the technical factors. The dose for a series of scans abutting each other increases by about 20 percent.

Of equal importance to the equipment advances is the introduction of metrizamide (Amipaque) for carrying out conventional myelography. This nonionic water-soluble contrast medium has extended the application of spinal CT scanning to allow consistent documentation of the spinal subarachnoid space and the spinal cord. A metrizamide myelogram alone may be inadequate or equivocal; however, a diagnostic CT scan can be done up to four hours after the myelogram.

The Society for Computed Body Tomography has reviewed the indications for spinal CT, dividing them into three types. Type I examinations (no contrast medium) are done in cases of suspected disc herniation, facet joint hypertrophy or spinal stenosis. Unenhanced CT is useful for identifying fractures or for localization for CT-guided biopsy or aspiration procedures. Conventional spinal CT is an ideal alternative to myelography in patients who may have allergy to contrast agents or who may have arachnoiditis.

Type II examinations use diluted intrathecal metrizamide (5 to 7 ml of 190 mg iodine per ml), while type III examinations use concentrated metrizamide injected for conventional myelography followed by CT. Type II and type III examinations are indicated for patients with congenital dysraphic abnormalities, including cases of overt meningoceles or meningomyeloceles or cases of occult dysraphism in which there may be a fatty tumor or intraspinal meningocele tethering the spinal cord. The intraspinal component of lesions can be identified with great precision by metrizamide-enhanced spinal CT. Cases with bone destruction or erosion also can be well examined by CT. The full extent of masses can thus be defined simultaneously whenever the lesions are both intra- and extraspinal.

In cases of cord atrophy or cord expansion, conventional myelography may not precisely define the size of the cord. However, metrizamide-enhanced spinal CT will clearly show and measure the degree of atrophy or enlargement. At the level of the foramen magnum, intraspinal masses or masses extending intracranially are best examined by metrizamide-enhanced CT.

Finally, CT permits evaluating results of surgical operations as well as changes occurring in the spinal canal. In patients receiving radiation therapy, CT is used to define the treatment ports and to document the results of irradiation.

Anton N. Hasso, M.D.
P.E. Billimoria, M.D.

REFERENCES

Alfidi RJ, Evens RG, Glenn W, et al: Special report: New indications for computed body tomography. Am J Roentgenol 133: 115-119, Jul 1979

Haughton VM, Syvertsen A, Williams AL: Soft-tissue anatomy within the spinal canal as seen on computed tomography. Radiology 134: 649-655, Mar 1980

## Metrizamide Myelography

In the short time that metrizamide (Amipaque) has been available in this country, it has greatly changed how myelography is done. This highly versatile agent may be used with conventional filming, tomography, or computed tomography (CT) to give diagnostic information which was not readily available with isophendylate (Pantopaque).

The advantages of metrizamide stem from its physical properties. Being water-soluble, it will penetrate narrow spaces and, thus, is a better agent for outlining nerve root sleeves and spaces about tumors and for showing the spinal cord near sites of compression. The necessity of mixing the contrast agent with its diluent immediately before myelography appears inconvenient, but is advantageous in allowing the operator to tailor the concentration precisely to the desired study. The gravitational layering effect works well to fill dependent nerve root sleeves early in the study while the mixing of metrizamide with cerebrospinal fluid, which results from patient motion, can be used to outline the spinal cord in later phases of the study. Because the contrast agent need not be withdrawn, it may be injected into areas from which withdrawal would be impossible, such as in the spinal canal above a thoracic block. Arachnoiditis following the use of metrizamide is virtually unknown; therefore, this contrast agent may be used in situations in which one would hesitate to use isophendylate,such as in cases of trauma and suspected arachnoiditis.

Metrizamide also has its disadvantages. The myelography must be planned in such a way that the contrast agent is moved gently from one region to another, avoiding excessive mixing that can rapidly dilute the agent to the point of being barely visible. Also, it may be difficult to examine the entire spinal canal without using large amounts of relatively high concentration, which increases the chances of side effects. Headache and nausea seem to be more prevalent after metrizamide myelography than after isophendylate myelography. Confusional states sometimes occur in older patients following metrizamide myelography, and coma has occurred in a few cases. The incidence of seizures shortly after myelography, originally reported to be much less than 1 in 1,000 in the European experience, is higher in the United States. This difference is probably related to the prior use in this country of isophendylate with its relatively low immediate toxicity, while European and Scandinavian myelographers were accustomed to working with aqueous contrast agents of higher toxicity, thereby developing more conservative myelographic techniques.

The combination of metrizamide and CT makes it possible to examine difficult areas using relatively low amounts and concentrations of the contrast agent, thereby decreasing the side effects. Areas where this technique is particularly helpful include the foramen magnum, cisterns about the brain stem and the suprasellar region, and investigation of syringomyelia. CT may also be used to salvage a myelographic study of the spinal canal in which the metrizamide has become too dilute for conventional filming.

Though not a perfect contrast agent, metrizamide is highly versatile and represents a significant advance over earlier myelographic contrast agents.

John R. Bentson, M.D.

### REFERENCES

Ahlgren P: Amipaque myelography without late adhesive arachnoid changes. Neuroradiology 14: 231-233, Feb 17, 1978

Baker RA, Hillman BJ, McLennan JE, et al: Sequelae of metrizamide myelography in 200 examinations. Am J Roentgenol 130: 499-502, Mar 1978

Skalpe IO: Adhesive arachnoiditis following lumbar radiculography with water-soluble contrast agents. A clinical report with special reference to metrizamide. Radiology 121: 647-651, Dec 1976

## Percutaneous Transhepatic Biliary Drainage

Although percutaneous transhepatic biliary drainage has been used for the past decade, its use has been greatly increased since angiographic catheterization techniques were applied by Ring and co-workers. These involve placement of catheters either proximal to lesions, permitting external drainage or across lesions, into the duodenum, permitting internal drainage.

Following administration of antibiotics and sedation, a fine-needle transhepatic cholangiogram is done on all patients prior to the placement of a percutaneous drainage catheter. This allows confirmation of the diagnosis of biliary obstruction, demonstrates the anatomy of the bile ducts and may demonstrate the site and nature of the obstructing lesion. A 16-gauge sheathed needle is then introduced from the right midaxillary line using the opacified biliary tree as a guide. When an appropriate duct is cannulated, the metal stylet is removed and the Teflon sheath is slowly withdrawn until bile flow is established. Once bile flow is established, an angiographic guidewire is introduced. The sheath-guidewire combination is then manipulated distally to the site of the obstruction. If the obstruction is crossed, the guidewire is manipulated into the duodenum and, using several intermediate steps, a 7-French or 8-French pigtail catheter is introduced with holes above and below the lesion. This permits either external or internal bile drainage. If the guidewire cannot be manipulated past the lesion, a pigtail catheter is introduced and external drainage begun.

This procedure is used preoperatively in patients with malignant obstruction to allow the patient to be completely evaluated and optimal presurgical physiologic status to be attained. Alternatively, those patients who are not surgical candidates may be effectively palliated. Patients with biliary strictures, obstructing calculi, obstructing pancreatitis and postoperative problems, have also benefited from temporary percutaneous drainage while awaiting more definitive therapy.

The success rate in placing a catheter in an obstructed biliary tree is approximately 90 percent. Of these patients, internal drainage can be established in about 85 percent. The most common complication is sepsis. In short-term drainage in patients without antecedent infection, the rate of cholangitis is 4 percent to 15 percent. However, this can usually be treated with fluids, antibiotic drugs and external drainage. The incidence of cholangitis in patients with chronic drainage is higher; however, this is usually due to blockage of the catheter and can be readily treated by medical management and replacement of the obstructed tube. Bleeding, leakage of bile and pneumothorax have also been reported; however, these are infrequent complications and have not required emergency operations.

Because of low morbidity and its ability to aid significantly in the management of difficult problems in the obstructed biliary tree, percutaneous biliary drainage is rapidly becoming an important adjunct in the management of surgical jaundice.

Harvey Rosenkrantz, M.D.

REFERENCES

Ferrucci JT Jr, Mueller PR, Harbin WP: Percutaneous transhepatic biliary drainage. Technique, results, and applications. Radiology 135: 1-13, Apr 1980

Hansson JA, Hoevels J, Simert G, et al: Clinical aspects of nonsurgical percutaneous transhepatic bile drainage in obstructive lesions of the extrahepatic bile ducts. Ann Surg 189: 58-61, Jan 1979

Pollock TW, Ring ER, Oleaga JA, et al: Percutaneous decompression of benign and malignant biliary obstruction. Arch Surg 114: 148-151, Feb 1979

Ring EJ, Oleaga JA, Freiman DB, et al: Therapeutic applications of catheter cholangiography. Radiology 138: 333-338, Aug 1978

## Contemporary Treatment for Early Breast Cancer

The wide exposure that the topic of breast cancer has received in the media has helped to prompt women to explore alternate methods to mastectomy. Further, it is now a law in California that when mastectomy is proposed to a patient, alternate methods of treatment must be discussed. This trend away from mastectomies suggests that results from conservative approaches to treatment can no longer be dismissed as preliminary and, in fact, mastectomy for early breast cancer may soon be outdated. Lumpectomy plus radiation therapy has been used long enough and on sufficient numbers of patients to be conclusive as one such approach.

Prosnitz, from Yale, recently presented data on 293 patients treated at four East Coast university hospitals. Patients has stage I and II disease and were treated with local excision and radiation therapy. Five-and ten-year survival rates were comparable with those of the mastectomy series, and the local control rate was 92 percent. Of the 8 percent that failed locally, half had no evidence of disease after salvage operations. Cosmetic results were good to excellent in 85 percent of patients.

Peters, from Princess Margaret Hospital in Toronto, reported on 203 patients with early breast cancer who were treated with limited surgical procedures and radiation therapy; 609 matched patients who had received mastectomies were used as controls. In 2- to 30-year follow-up studies, no significant differences in survival rates were noted.

Bonadonna recently reported the five-year results of a study in Milan where a randomized trial is underway. This trial compares the results of segmental mastectomy followed by radiation therapy, with those of Halsted radical mastectomy. Patients had T1, N0 and M0 lesions. By May 1980 more than 700 patients had been included. Relapse-free survival was 83 percent for the conservative group. Total survival was 89.7 percent and 88.5 percent, respectively. This study is exciting because it is both prospective and randomized.

As public interest in alternate methods to mastectomy for treatment of early breast cancer grows, physicians need to be aware of such options.

Jerome Stuhlbarg, M.D.
Thomas G. Simko, M.D.
Kenneth M. Tokita, M.D.

REFERENCES

Prosnitz LR, Goldenberg IS, Harris J, et al: Primary radiotherapy for stage I and II breast cancer: Follow up report from four East Coast university hospitals. Int J Radiat Oncol Biol Phys 6: 1339-1340, Oct 1980

Peters MV: Wedge resection with or without radiation in early breast cancer. Int J Radiat Oncol Biol Phys 2: 1151-1156, Nov-Dec 1977

*Reprinted with permission from The Western Journal of Medicine, March 1981*

# Role of Primary Care Physician in Sports for the Handicapped

ALFRED HEALY, M.D.

The referee tosses the ball for the center jump. It's quickly tipped to the forward who races toward the basket - in a wheelchair.

The crowd eagerly anticipates the first appearance of the 500 meter downhill skiers - and is not surprised to see that the leader has only one arm.

The baseball is grounded back toward the mound. The pitcher throws it in the general direction of first base, while a coach guides the blind batter along the baseline.

Unusual—yes, but definitely increasing in frequency. All of these incidents represent opportunities for handicapped children and young adults to enjoy sports and recreational activities that were not available to them a few years ago.

One of the most enjoyable of the increased responsibilities of primary care physicians is to encourage handicapped children to engage in such recreational sports and other physical education activities. Because of relatively new public laws (PL 94-142 and Section 504 of the Rehabilitation Act of 1973), additional opportunities to participate in these activities have become available to handicapped children in the school and community setting. The primary care physician must be aware of those opportunities and be knowledgeable of techniques to encourage and advise handicapped children and young adults to "get involved" - the opportunities currently are broad and the rewards are great.

Traditionally the values of participation in sports and recreational activities have been:

1) to develop leadership and promote competitive spirit;
2) to promote physiological health through increasing strength and endurance of the muscular and cardiovascular systems;
3) to promote motor control and teach skills that are useful to the child during later adult years;
4) to assist the participant to learn the "rules of the game" and to apply them in a larger sense to the "rules of life";
5) to assist in the development of positive mental attitudes through promotion of a balance between sedentary activities and vigorous muscular activity.

These values are generally applicable to the child with a disability. In addition, there are other benefits that sports and recreational activities can bring to handicapped children, young adults, and their parents as well as to the communities in which they live.

There are two distinct potential plans for structuring a world that will allow the handicapped their rightful place—we may either modify present societal attitudes, or assist the handicapped to adjust to the biases of society. While the optimal solution—that of modifying society—is in progress, the handicapped person must be helped to live in and deal with society and the world as they are. Sports and recreational activities are excellent vehicles for them to learn to do so.

Sports and other recreational activities provide an excellent opportunity for the child to receive realistic feed-back from disabled and non-disabled peers regarding his/her performance. There is a very strong tendency for all individuals to provide handicapped persons unrealistic comments on their accomplishments. When the skill or end result is quite well defined and the handicapped child *fails,* he/she becomes aware of that fact, and if appropriately assisted by coaches and understanding peers, a valuable lesson is learned. However, when a similar "failure" is accepted by

---

ALFRED HEALY, M.D., Professor of Pediatrics and Special Education; Chairman, Division of Developmental Disabilities, University of Iowa School of Medicine.

coaches and non-handicapped peers as a success, totally inappropriate information is fed back to the handicapped performer, and an unrealistic and inaccurate perception of his/her ability is gained.

Secondly, sports are excellent methods to assist a handicapped child to initiate programs to remediate or resolve the problem that is causing his/her disability. One example of this is the use of recreational activities to stimulate the child with exogenous obesity to combine an aerobic approach to weight reduction with a sound nutritional program to achieve significant weight loss. In our limited experience of encouraging such activity in a group of ten significantly obese children, aerobic activities have greatly assisted in significant weight reduction in total body fat. Ten children, ranging from five through fifteen years of age (six male, four female) with an average weight of 226 pounds (examples: 105 pound five-year-old; 220 pound seven-year-old; 325 pound fifteen-year-old), participated in a daily combined program of nutritional restraint and a structured aerobic program for a mean loss of 43.9 pounds over a six-month period. It is certain that without the motivational aspect of their participation in modified sports occurring in combination with the caloric expenditure of the physical activity and the nutritional program, the success of the project would have been significantly compromised.

Additionally, there is significant value for specific disability groupings to receive particular benefits from participation in sports and recreational activities. For example, swimming has been long felt to be especially beneficial to the individual with asthma. (Indeed, world class swimmers with asthma have represented this and other countries in international competition.) Swimming has served as a method whereby these athletes could express their physical prowess - in spite of the fact that their exercised-induced bronchiospasms (EIB) were triggered when they participated in almost all other sports. Only recently has it been documented that swimming per se has not been that beneficial, but that the hot, moist atmosphere of the swimming pool is probably the single most important factor in protecting against the occurrence of EIB. No other sport allows the asthmatic to express themselves motorically as well as swimming.

The value of sports to draw attention to particular schools, cities, or other associations has long been recognized. Prominent college teams bring national attention to other facets of their total collegiate or university settings. A similar use of sports or recreational activities has a legitimate role in promoting the cause of the handicapped at the state or community level.

Promotion of sports and recreational activities for the handicapped at the community level allows two important factors to combine for a potentially very positive effect. Not only do the participants gain the mental and motor benefits inherent in the sport or activity, but such programs serve as excellent communication vehicles to all members of the community regarding the abilities—and needs—of the handicapped child and adult. First, observation of sports activities, public playgrounds, or gymnasiums allows nonhandicapped community members to gain firsthand knowledge of the benefit of increased motor skills, lessons in knowledge of rules, and simple enjoyment that individual and group activities can bring to the handicapped. Secondly, media presentations about the occurrence and results of such activities can bring to a community a sense of awareness regarding the total needs of the disabled that many other "feature story" approaches may totally miss. People enjoy sports and games, and they enjoy seeing and hearing of others enjoying similar activities. The use of sports and recreational activities to assist in the community awareness and acceptance of the disabled appears to be legitimate.

One study (unpublished, Texas Tech University), sponsored by the Special Olympics, supports this concept. Four communities of similar population and demographic characteristics, each without a Special Olympics Program, were selected for the study. All four communities were surveyed to determine parental and teacher attitudes toward the abilities of the handicapped; the general community individuals perceptions of the handicapped; and the knowledge of the needs of the disabled as expressed by community leaders. Following the initial survey, one community had a full year's Special Olympics Program introduced into the community; two others had modified, shorter Special Olympics introduced; and one community served as a control and had no Special Olympics during the three year observation period.

The results proved the positive impact of the project in all areas except for positive changes in the community leaders' *actions* toward the handicapped. Parents, teachers and the general public appeared to possess an increased awareness of the presence of the disabled, a greater sensitivity toward their needs, and a more realistic expectation of their true potential in many life activities. Many of these positive changes appeared to occur because of increased media coverage in the communities of *all* aspects of the lives of handicapped individuals, not just those concerned with their recreational activities.

With this background, what is the responsibility of the primary care physician toward their handicapped patient? Is it a significantly different role—or is it one that the physician is accustomed to and can easily fulfill? A quote from Tom Schaeffer, M.D., professor emeritus at Ohio State University, supports the latter viewpoint.

> "One of the myths I would like to dispel at once implies that a child is either suited or unsuited

for sports; this is simply an old-fashioned idea. The current view is that a child—virtually every child—is suited for some particular sport, and one of the ways a pediatrician can be especially helpful is to match (his) patient to a sport which is appropriate in terms of the patient's abilities and physical and emotional makeup. Young people like to compete, and when we are familiar with the demands of various kinds of sports, we usually can find one that is safe and appropriate even for the most unskilled and nonaggressive youth."

This could be paraphrased to tell physicians: "Practice good medicine. Know your patient, be aware of their abilities and disabilities, provide high quality health supervision, and be knowledgeable of all spheres of their life, family, school and community including recreation and sport activities."

This approach dictates a need for a specific prearranged plan for all primary care physicians as they offer high quality health care to *all* their child and adolescent patients. This plan would include a continual process to detect and be aware of the influence of all sensory deficits, the impact of any processing or cognitive disabilities, and the influence of any motor disability that might interfere with physical activities of locomotion, self-help skills, communication and participation in games and other recreational activities. The physician is in the optimal position to not only be aware of the child's deficits, but to encourage a "total care" plan—one that also assists the child's parents to help the child to overcome apprehension, and the fear of failure, and to gain a positive sense of "I can do it".

Specifically, primary care physicians need to:

1. Know the abilities and disabilities of their handicapped patients: the degree of sensory deficits; the severity of mental limitation and functional deficits; motor weakness and lack of coordination; health conditions affecting strength or endurance; and emotional strengths and stability.
2. Know the community's and school's resources for *all* levels and ages of children and young adults with disabilities.
3. Know the general attitudes of the school and community recreation leaders.
4. Know the child's parents or care providers well enough to advise them in encouraging their child's participation in sports and recreational activities, and to encourage the parents' own participation in coaching or in other capacities.
5. Be aware of current trends and theories in exercise physiology and sports medicine for handicapped and nonhandicapped children.
6. Be on guard against overzealous organizers, parents, coaches, and others who sometimes forget that the primary purpose of all sports and games is to have fun, and not to win games.

A last word of caution. Just as there are many non-handicapped children who do not participate in games and sports on a regular basis, there are handicapped children and young adults who do not wish to participate. The major difference between the groups is that the non-handicapped can almost always make this choice personally. Far too many handicapped are not given the opportunity to make a decision for themselves. A physician's knowledge and encouragement can serve as one significant way to change that outcome.

---

The successful teacher is no longer on a height, pumping knowledge at high pressure into passive receptacles . . . He is a senior student anxious to help his juniors.

—Sir William Osler

# Rehabilitative Benefits of Sports for the Handicapped

## GABRIELLA MOLNAR, M.D.

Sports for the physically handicapped represent an application of the philosophy and principles of rehabilitation on the highest level. It is a striking demonstration of human adaptability and compensatory function as a substitute for non-restorable functional loss.

While the organized sport movement is of relatively recent origin, some handicapped persons made a breakthrough entirely on their own in the past. Some well known examples included two European Olympic gold medal winners and several American professional ballplayers. However, these were exceptional individuals with extraordinary drive, determination and outstanding athletic achievements usually predating the onset of disability.

Development of organized sports adapted for the physically handicapped was initiated almost simultaneously in England and in the U.S. The movement was closely linked with the spinal cord injury centers which were established during World War II to provide specialized care for these casualties.

There are now many sport organizations and increasing number of facilities both in this country and abroad for individuals with different types of physical handicaps.* Canada, Germany, Australia, Japan, Israel and the Scandinavian countries are some of those with well organized recreational programs and competitions.[1]

One sport organization for the handicapped which has grown to an international movement is the Special Olympics for retarded children and adults.[2, 3, 4] It evolved from the Kennedy Foundation's interest in physical fitness for retarded individuals and was initiated in 1963 with the cooperation of the American Alliance for Health, Physical Education and Recreation. The organization has chapters and competitions in every state on a regular basis, and holds national and international games every four years.

That the popularity of sports has gathered considerable momentum among the handicapped is best illustrated by a few statistical data. At the first Stoke Mandeville Games for the Paralyzed in 1948 there were 16 paraplegic contestants. In 1976 at the Toronto Olympiad, 1500 disabled athletes competed representing 36 countries.[5, 6] The number of entrants in the Special Olympics has increased from 1000 to 3200 between 1967 and 1975.[3]

### Rules and achievements in competitive sports

In competitive games there are events for each disability, as shown in Table 1. Contestants with the same type of handicap are assigned to specific categories on the basis of medical examination so that individuals with matching functional abilities compete against each other.[7, 1, 8] There are several categories for spinal cord dysfunction according to the extent of paralysis and for amputation depending on the level of limb loss and affected extremities. The visually handicapped are classified in two categories by presence of light perception or complete lack of vision.

Table 1

COMPETITIONS IN THE OLYMPIAD FOR THE PHYSICALLY DISABLED

| *Wheelchair* | *Blind* | *Amputee* |
|---|---|---|
| Track | Track | Track |
| Field | Field | Field |
| Swimming | Swimming | Swimming |
| Archery | Bowling | Table tennis |
| Weight Lifting | Pentathlon | Rifle shooting |
| Fencing | Goal ball | Bowling |
| Table Tennis | Wrestling | Football |
| Rifle shooting | | Slalom |
| Slalom | | Pentathlon |
| Pentathlon | | Volleyball |
| Basketball | | |

### Special considerations

On advising a handicapped person about sports, physicians must be aware of certain considerations, some generally applicable while others pertain only to specific disabilities.

The energy cost of sports is an important work physiologic point to consider in all handicapped indi-

---

*A list of organizations can be obtained from the author.

GABRIELLA MOLNAR, M.D., Professor of Rehabilitation Medicine and Pediatrics, Albert Einstein School of Medicine of Yeshiva University, Bronx, New York.

viduals. The metabolic economy of human performance is contingent on its biomechanical and kinesiologic correlates. Any deficit which interferes with musculoskeletal mobility raises the energy expenditure of physical activities. Measurements and calculations obtained by indirect calorimetry show that unilateral below-or-above knee amputees would require 10-33% and 38-55% more energy, respectively, if they would walk at the same comfortable pace of 3.5 MPH as able-bodied persons.[9] Investigations in other handicaps and our studies on handicapped children indicate similar trends.[9, 10] Although at present there are no definitive data, it is reasonable to assume that, in principle, these findings apply to adaptive sports as well. The implication is that the energy cost of various sports estimated for the able-bodied may be higher in handicapped performers. This issue is relevant to training, to the selection of appropriate sports and adaptations. As an example, above-knee amputees are functional community ambulators at higher energy expenditure or slower speed. For a fast moving basketball game they may opt to use a wheelchair or, more likely, one would recommend a more suitable sport.

Increased energy cost is related to the nature of adaptive motor performance. Complex physical activities require a combination of movements in the limbs acting as primary effectors of desired action and in the entire body for background postural stabilization. A physically handicapped person must resort to substitutive strategies which are biomechanically less efficient and, therefore, ergonomically more costly. Comparing the EMG patterns of the shoulder girdle and elbow musculature participating in archery, Guttman[5] found that recruitment was considerably higher in a $C_7$ tetraplegic than in a $T_{12}$ paraplegic, illustrating the increased effort needed in the absence of trunk stability.

Several physiologic changes should be considered, e.g., in the spinal cord injury. Thoracic lesions disrupt the central connections of the automomic nervous system and lead to sudorimotor paralysis.[5] Since sweating below the level of lesion is not under the control of autonomic thermoregulatory mechanism there is no perspiration over the paralyzed body parts in response to elevated metabolic heat production or high ambient temperature. Increased perspiration above the lesion ordinarily compensates for this deficit. However, the reduced surface area available for this purpose may not be adequate for maintaining homeostasis under extreme circumstances such as those created by a combination of vigorous activities and high environmental temperature. Therefore, persons with spinal cord injury must use greater precautions in summer sports to avoid heat exhaustion and hyperthermia. Another physiologic disturbance in spinal cord lesions above the midthoracic level is autonomic hyperreflexia.[5] The mechanism is sudden rise of sympathetic activity in the isolated distal spinal cord devoid of central inhibitory impulses. Autonomic crisis may be precipitated by a variety of sensory stimuli, most often bladder or rectal distension. Clinical manifestations are profuse sweating, including reflex perspiration below the level of cord lesion, flushing of the face, pupillary constriction, headache, bradycardia and hypertension. The rise in blood pressure, particularly, when superimposed on the exercise-induced elevation may be considerable. Usually, removal of the precipitating sensory stimulus is sufficient to abolish autonomic hyperreflexia, and all paraplegics are trained in measures to prevent its occurrence. One should also keep in mind that high paraplegics and tetraplegics are prone to vasomotor lability with postural hypotension, and that their respiratory reserve is low due to paralysis of the intercostal muscles.[5]

## Adaptive sports for physically handicapped

Essentially, all sports which are performed on level ground and rely on upper extremity function can be adapted to wheelchair. To withstand the stress of vigorous sports a specially designed heavy duty wheelchair is used. It is equipped with pneumatic tires, low arm rests to make the propelling hand rims easily accessible, footrests with rubber bumpers, and side guards to protect the opponent from foot injuries in contact sports, a particularly important precautionary measure when sensation is impaired.[11]

In paraplegia or paraparesis with complete or partial weakness around the three major lower limb joints, ballgames, track and field events are popular wheelchair sports. The distance of track races has increased over the years. Recently wheelchair contestants have entered and finished marathon races for able-bodied runners. In javelin, discus and other similar field events the momentum-gathering motion preceding the throw is modified to sitting position. Bowling, pool and golf can be also played from wheelchair.[12]

Through the efforts of several organizations in this country and abroad, horseback riding is gaining popularity among handicapped children and adults.[13, 14, 15] It is a good sport to improve equilibrium reactions in children with cerebral palsy and other neuromuscular handicaps. Walking independently or with assistive devices is not a prerequisite of riding. Modified saddles can be used for trunk stabilization if necessary.

Among the winter sports, skiing is enjoyed by many handicapped people with disabilities in which this was thought to be an impossible feat previously.[16] Amputees are agile skiers with outrigger ski poles having an attachment like a short ski.[17, 18]

Ice skating has not become as popular as skiing although it is both appropriate and beneficial in various handicaps. It is recommended in certain types of amputations, paraparesis, cerebral palsy and even in early mild cases of progressive neurologic diseases. As Adams and his colleagues,[19] pointed out, the kinesiologic and biomechanical requirements of skating and walking are quite similar. Shifting the center of gravity, weight transfer to alternating legs, are movement components of both activities and help to improve balance. When equilibrium is precarious a modified walkerette or skate aids resembling the outrigger skipoles can be used.

The visually handicapped rely on substitute sensory cues in sports.[20] It may be the voice of a caller in track events, directions by a sighted guide in skiing or golf, or sound signals emitted from a base or from the so-called beep ball. In wrestling, the close body contact provides adequate direct tactile input.

### Injuries

There is no evidence to indicate a higher incidence of injuries, accidents or other complications related to sports. During the rehabilitation process handicapped persons are trained to be aware of their special needs and precautions to maintain health and fitness. In general, those who accomplish the level of adaptation consistent with active sports are the ones who adjusted to their disability emotionally and learned best to take care of their physical needs. They are more conscious of the necessity to be careful and to keep in good physical shape under all circumstances than most non-handicapped persons who often take a well functioning body for granted. Statistics from the Olympiad for the Physically Disabled[8] and from the Special Olympics[2] show that the majority of problems requiring attention were minor strains, sprains, infections, bruises, cuts, insect bites and rashes.

### Benefits of sports

In assessing the benefits of sports physical and social/emotional effects are equally important.

Compared with the large body of information in the able-bodied, there is only a smattering of data on sport and exercise physiology in the handicapped, Ekblom and Lundberg,[21] Knutsson et al,[22] Nielsson, et al[23] observed low maximal aerobic power and working capacity in untrained wheelchair-bound paraplegics and in adolescents with cerebral palsy. Strength and endurance training with arm or leg ergometer resulted in significant increase of $VO_2$ max, maximal working capacity and mechanical work efficiency, and was accompanied by a subjective improvement of well-being. A consideration of great practical importance is the effect of training on adaptive functional activities used in daily life. Addressing this question, Oldridge and Wicks[24] correlated working capacity and energy expenditure in paraplegics before and after training in actual wheelchair propulsion. The trained subjects used fewer arm strikes to achieve faster speed against greater resistance. Thus, increased power of arm strike led to higher work efficiency with reduction in metabolic cost.

In a study of strength development among children we have performed quantitative measurements of ten muscle groups in 1800 normal and 400 educable retarded children from 7 to 15 years of age.[25, 26] On the average, the strength scores of retarded childred were 1.5 SD below those of their non-retarded peers, and the differences tended to increase with age. That these deviations were related to low level of physical activities was supported by observations made on an experimental group of retarded children. After a ten-month period of exercises and enriched physical activities these children showed a virtually complete correction of low strength scores, improvement of balance and posture.

Although the social/emotonal benefits are more elusive in terms of objective assessment, the significance of these aspects of sports cannot be stressed enough.[5, 8, 16] The personal satisfaction generated by these achievements extends beyond potential physiologic gains and recreational value. The sense of well-being which accompanies participation in sports is an important therapeutic factor to restore self-image, to create self-confidence and to promote emotional adjustment. It helps overcome depression and mourning following a catastrophic functional loss, awakens drive and determination to lead a productive life, and contributes to successful integration to society.

### Conclusion

Participation in sports is the last frontier conquered by the handicapped. It is the home stretch of a long, arduous and by no means barrier-free course in their pursuit of equal opportunities.

### REFERENCES

1. Ryan, AJ: Sport in a wheelchair. Physician and Sports Med. 2:51, 1974
2. Mealey M: Special Olympics can mean a medal, and maybe a future. Physicians and Sports Med 4:30-33, 1976
3. Bedo AV, Denlow M, Moffit P and Kople KW: Special Olympics athletes face special medical needs. Physicians and Sports Med 4:51-56
4. Joseph P. Kennedy Foundation: A New Kind of Joy Washington DC, 1976
5. Guttman L: Spinal Cord Injuries. Blackwell Scientific, London, 1973
6. Guttman L: Reflection on the 1976 Toronto Olympiad for the physically disabled. Paraplegia 12: 225-240, 1976
7. Guttman L: Texbook of Sports for the Disabled. HM and M Publishers, London 1976
8. Jackson RW and Fredreickson A: Sports for the physically disabled. Amer J Sports Med 7:293-296, 1979
9. Fischer SV and Gullickson G: Energy cost of ambulation in health and disability: a literature review. Arch Phys Med Rehabil 59:124-133, 1978
10. Molnar GE and Thind K: Energy expenditure of locomotion in handicapped children. In preparation.
11. Shapira W: Wheelchair football: a rigorous fast sport. Physicians and Sports Med. 2:16-17, 1974
12. Hale G: The Source Book for the Disabled. Paddington Press, New York, 1979

13. Haskin MR, Erdman WJ, Bream J et al: Therapeutic horseback riding for the handicapped. Arch Phy Med Rehabil 55:473-474, 1974
14. Woods D: Horseriding catching on as therapy for the disabled. Canad Med Assoc J121:631, 634, 650
15. Walker GM: Riding for the handicapped. Physiotherapy 64:297, 1978
16. Ryan AJ (ed) Sport and Recreation for the Handicapped - Round Table Physicians and Sports Med 6:44-61, 1978
17. Kegel B, Webster JC and Burges EM: Recreational activities of lower extremity amputees: a survey. Arch Phys Med Rehab. 61:258-264, 1980
18. Smith JP: In what sports can patients with amputations and other handicaps successfully and activity participate? J. Amer Phys Ther Assoc.
19. Adams R, Hakala M and Oppelt K: Ice skating therapy. Physicians Sports Med 6:71-81, 1978
20. Ross J: Blind break through old barriers to sports. Physicians Sports Med. 5:98-104, 1977
21. Ekblom B and Lundberg A: Effect of training on adolescents with severe motor handicap. Acta Paed Scand 57:17-23, 1968
22. Knuttson E. Lewenhaput-Olsson E and Thorsen M: Physical work capacity and physical conditioning in paraplegic patients. Paraplegia 11:205-216, 1973
23. Nilsson S, Staff PH and Pruett ED: Physical work capacity and the effect of training on subjects with long standing paraplegia. Scand J Rehab Med 7:51-56, 1975
24. Ryan, AJ: Another olympics, another flame; different athletes, different game. Physician and Sports Med 4:133-135, 1976
25. Molnar GE and Alexander J: Muscle strength in children, deviations in the retarded. Final report Maternal and Child Health Service MC-R 360190
26. Alexander J, Moinar GE and Rotkin L: Exercise program for mildly retarded children. Arch Phys Med Rehab 59:536, 1978

**NEW ENGLAND CONTACT LENS SEMINAR**

**Stratton Mountain Inn**
January 17-20, 1982

**Stratton Mountain**
Vermont

**COURSE DIRECTORS:** Peter Donshik, M.D. and John B. Franklin, M.D.
Assistant Clinical Professors, University of Connecticut School of Medicine.

**DESCRIPTION:** Intensive four-day course on evaluation and management of the Contact Lens Patient includes early morning and evening lecture and workshop sessions in a setting conducive to both study and relaxation. For leisure time hours, skiing is offered on two mountains with discounted lift tickets, events.

**SPEAKERS:** Nationally and internationally known speakers including: Joseph W. Soper, F.C.L.S.A., Louis Wilson, M.D. and Perry Rosenthal, M.D.

**REGISTRATION AND ENROLLMENT** $250 for practicing physicians • $200 for resident physicians and ophthalmic technicians • Limited to first 100 registrants • 18 hours of CME credit available • Offered in conjunction with the University of Connecticut School of Medicine and Connecticut Society of Eye Physicians.

(tear off)

__________ Enclosed is my check for $________. Please reserve my place in the New England Contact Lens Seminar and send supplementary information on lodging, etc.

__________ Please send me information, registration and lodging form for the New England Contact Lens Seminar.

Name ____________________ Phone __________

Address ____________________

Mail to: **CONTACT LENS SEMINAR** • One Regency Drive • P.O. Box 30 • Bloomfield, CT 06002

# Physical Education and the Handicapped

WALTER F. ERSING, Ph.D.

The recent decade has produced significant progress in various areas related to physical education and the handicapped. Areas experiencing visible change in physical education for the handicapped include professional preparation, research and curriculum development/programming. The purpose of this paper is to primarily deal with the area of programming for the handicapped in physical education.

More specifically, the paper will discuss legislative factors which have impacted upon physical education for special populations and examine a select number of adapted physical education programs currently being implemented or under development. It is hoped such a discussion will serve to clarify the role of physical education for the handicapped and to develop an awareness as to programming potential in physical education for the handicapped.

## Clarification of Adapted Physical Education

Before embarking on the treatment of the primary topic, it would seem appropriate to clarify the meaning of the term adapted physical education as it will be used continuously throughout the presentation. Adapted physical education can be described as programmatic extension of physical education designed to provide a diversified and safe program of movement experiences for individuals with unique motor or physical problems. Adapted programming concepts can be implemented within a variety of instructional environments including a highly specialized one-on-one intervention session, a special class for a specific categorical problem or when a handicapped child is integrated within a regular physical education class.

Effective programming in adapted physical education utilizes the process of identifying motor or physical performance problems through the use of screening and assessment techniques and then developing appropriate intervention strategies to address the individual's problem or need identified. Since a diversification of movement experiences is possible through adapted physical education, a wide range of activity involvement by children with a variety of handicapping or health conditions can be provided through such programs.

A brief examination of the movement experiences available will substantiate the type of comprehensive programming possible for the handicapped child in physical education. Included in a comprehensive program are experiences such as play activities, fundamental locomotive movements, non-locomotive movements, perceptual-motor/sensory-motor activities, movement exploration/education gymnastics, games: small and large group, team sports, physical fitness (including interval training, conditioning exercise, weight training, aerobic), postural fitness, combative, rhythmic and dance activities, relaxation, swimming and aquatic activities, and outdoor pursuits.

As one reviews the various activity experiences, it is evident that adapted physical education is not merely athletics or sports. Though sport activities provides a valuable movement experience, it should not be the sole one offered to children in physical education or be focused upon until other motor and physical prerequisite are in place. In essense, adapted physical education is an educational experience which utilize varied motor and movement experiences to facilitate development or remediation of a motor or physical problem. In addition, social and psychological development is potentially evident through the use of such movement experiences as well.

---

WALTER F. ERSING, PH.D., Professor, Physical Education
The Ohio State University.

### Physical Education and Federal Legislation

Relative to the impact of federal legislation on physical education, perhaps one the most significant pieces of legislation is P.L. 94-142, The Education for All Handicapped Children Act of 1975, which assures the handicapped child the right to free and equitable educational opportunities. The law mandates key provisions, one being that all handicapped children must have an individualized educational program (I.E.P.), which includes educational goals and objectives jointly developed by parents and school officials. P.L. 94-142 also stipulates that handicapped children must be educated in the least restrictive environment. The educational placement opportunities, therefore, must be varied and designed for the individual needs of each student as well promote educational experiences with the non-handicapped children as much as possible.

**P.L. 94-142 and Physical Education**—The impact of PL 94-142 on physical education becomes more evident as one examines the rules and regulations for implementing PL 94-142 and the definition of terms within the law. Among the significant terms defined is that of special education:

> "... the term 'special education' means specially designed instruction, at no cost to the parent, to meet the unique needs of a handicapped child, including classroom instruction, *instruction in physical education,* home instruction in hospitals and instructions."[1] (emphasis added)

Physical education is specifically treated in this section of the law as well and is defined as the development of:

"A) Physical and Motor Fitness;

B) Fundamental Motor Skills and Patterns; and

C) Skills in Aquatics, Dance, and individual and group games and sports (including intramural and lifetime sports).

ii) The term includes special physical education, adapted physical education, movement education and motor development."[2]

Two significant points need to be made at this time. First, under these regulations, a child is not considered "handicapped" unless they require "special education". The second important point is that physical education is the only curriculum area specifically identified in the definition of special education.

To further emphasize the importance of physical education, the Congressional Education Sub-committee expects "the Commissioner of Education to take whatever action is necessary to assure that physical education services are available to all handicapped children, and has specifically included physical education within the definition of special education to make clear that the Committee expects such services, specially designed when necessary, to be provided as an integral part of the educational program of every handicapped child."[3] Thus physical education should be quite obviously looked upon, not as a luxury, but as an integral part of an individual's total education plan.

**P.L. 93-112**—Another piece of legislation having a profound effect on the handicapped and physical education is P.L. 93-112, generally referred to as the 1973 Rehabilitation Act and, in particular, Section 504 of the Act.

This Act is often referred to as the "Civil Rights Act for the Handicapped." Section 504 which influences the quality of education, vocational and related services provided to the handicapped, specifies that:

> "No otherwise qualified handicapped individual in the United States shall solely by reason of his handicap, be excluded from participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."[4]

In brief, this mandate states that all qualified handicapped students may not be excluded from programs because of non-accessibility and, when included may not be denied an equally effective opportunity to succeed in any program provided in a minimally restrictive environment by any organized body receiving federal financial assistance. These mandates impact on schools, businesses and social services, plus impact on handicapped individuals of all ages. Being a piece of civil rights legislation, P.L. 93-112 is more comprehensive in scope as compared to P.L. 94-142.

Section 504 specifically addresses physical education and athletics. Under the Section 504 regulation, an educational institution receiving federal aid may not discriminate on the basis of handicap in providing physical education courses, athletics, and similar programs and activities to any of its students.[5] This section further states that no qualified handicapped student may on the basis of handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any physical education, athletics or recreation program.[5] Access to physical education is additionally clarified by stating that "an institution that offers physical education courses . . . must provide to qualified handicapped students as equal opportunity for participation in these activities."[5]

In view of the regulations under Section 504, the Act reaffirms the rights of the handicapped to physical education and if necessary, indivilized (I.E.P. related) physical education. With respect to other extracurricular activities such as athletics and intramurals, the same opportunity for participation must be afforded to qualified handicapped students.

It is evident that both pieces of legislation have increased the opportunity for handicapped students to gain access to adapted physical education. However, another factor having significant influence on the development of physical education for the handicapped has been funding made possible through select federal agencies. Such funding has been principally utilized to stimulate development in three directions, namely personnel preparation, research and demonstration.

Of the federal resources, the Division of Personnel Preparation (D.P.P.) in the Office of Special Education formerly B.E.H.) has particularly influenced adapted physical education programming through personnel preparation efforts since 1969. The impact of D.P.P. has been significantly evident in the development of professional preparation programs for specialist in adapted physical education (from approximately 6 in 1969 to 32 in 1980); in increasing the number of trained adapted specialist from such professional programs prepared for the field (from approximately 20 per year in 1968 prior to funding to an average of approximately 200 per year since 1969) and in the establishment of inservice programs at the local, state, regional and national levels.

Though not all of the ramifications of federal legislation and funding have been treated in detail, it is evident from this overview that the development of programs in adapted physical education and opportunities for the handicapped to have their motor and physical development needs addressed through such programs have been significantly impacted upon in the past decade.

## Program Models in Adapted Physical Education

As one examines the programming potential of adapted physical education, the remedial activities, adapted sports and games and developmental motor experiences are three primary dimensions which have historically evolved and are recognized as part of any comprehensive programming approach in physical education for the handicapped. Though space will not permit threatment of some of the traditional programs which are being implemented for the handicapped and non-handicapped in adapted physical education, an examination will be conducted of a select number of nationally validated or recognized programs which have been developed recently to address problems of a single categorical condition or for cross-categorical conditions.

The development of nationally validated programs has been one of the significant trends in adapted physical education since the mid 1970's. A cursory examination of such programs will further substantiate the potential comprehensive scope of experiences available in adapted physical education for a child with a special motor and physical need.

**Project ACTIVE**[6]—This is a nationally validated program for physical education and special education teachers of the handicapped. The program utilizes a diagnostic-prescriptive model designed to provide individualized-personalized instruction through the use of a comprehensive curriculum and a variety of teacher strategies.

The program is designed to serve all handicapped individuals but is also applicable to normal, slow learners and gifted children. Specifically, the program is designed to address problems of the mentally retarded, learning disabled, orthopedically handicapped, visually impaired, auditorily impaired, malnourished, asthmatic, postural abnormalities and post-operative.

Seven curriculum manuals and materials provide the teacher with the testing, assessing and program materials in the following areas: low motor ability, low physical vitality, postural abnormalities, nutritional deficiencies, breathing problems, motor disabilities and communication disorders. Inservice materials in the form of a guide, filmstrip and manual for the purpose of providing inservice training on the curriculum through the project staff are available.

**I CAN**[7]—The I CAN is an instructional system designed to be utilized by the physical educator, classroom teacher or teacher consultant who work with handicapped children (primarily retarded) from age 5 to 14 in special or integrated programs. The systems approach is utilized to guide the teacher in planning a total physical education program including primary and intermediate objectives sequenced across a year plan with specific monthly and daily time blocks.

The program is comprised of four performance areas, each of which consists of two major sub-areas. These areas are: Fundamental skills: locomotor skills and rhythm object control; Body Management: body awareness and body control; Health and Fitness: fitness and growth and posture; Aquatics: basic swimming skills, swimming and water entry.

Each sub-area consist of specific skills with each specific skill having an overall performance objective; levels for assessing skill performance; instructional activity according to assessment level and game activities for each level. An implementation guide used along with inservice training has proven effective in developing teacher competencies to plan and teach within the curriculum.

**Project PEOPLE**[8]—This program is nationally accredited by the Department of Education and focuses on one-on-one individualized learning through peer tutoring called student aides. The program is designed for handicapped individuals grades 9 through 12 and may be used for middle and elementary school.

The curriculum consists of 35 separate Units of Instruction in the areas of individual, dual and team activities. Each unit has been developed with task-analyzed objectives for six content elements consisting of skill progression, safety, terminology, rules, history and etiquette. Curriculum materials available include the Units of Instruction, an administrative guide and student aide training manual.

**Individual Motor Program (I.M.P.)**[9]—The model focuses on the assessment and development of eleven "fundamental motor," skills through two linking program elements, the O.S.U. SIGMA and a Performance Base Curriculum (P.B.C.). The approach is designed for mentally retarded children from preschool through the remainder of the developmental period. The program is also applicable to other handicapping conditions such as learning disabilities and autism as well as for normal children with motor delay or coordination problems from pre-school to nine years of age.

The O.S.U. SIGMA is the assessment element of the program and is a criterion reference tool for eleven fundational motor skills, namely walking, stair climbing, running, throwing, catching, jumping, hopping, skipping, striking, kicking and ladder climbing. Each SIGMA skill has four levels of performance with level one being the least mature while level four is the mature, functional level. Assessment consist of determining which one of the four levels of a given skill represents the child's prosent performance level. The P.B.C. consists of a sequence of instructional experiences for each level within each skill of the SIGMA and includes short term instructional objectives with sub teaching-learning experiences sequentially and progressively arranged.

**A Data Based Gymnasium**[10]—The model provides a systematic approach to physical education for the handicapped through the use of a data based physical education curriculum designed for low incidence severely and profoundly handicapped children enrolled in the National Model Program for Severely Handicapped Children in Monmouth, Oregon.

The model utilizes the underlying principle for behavior programming which consists of seven steps: 1) Pinpointing and accurately defining the behavior; 2) Baselining the behavior; 3) Establishing a terminal objectives; 4) Designing and implementing the behavior program; 5) Analyzing the data; 6) Modifying the program as necessary and 7) Insuring that the behavior change is maintained over time. The curriculum focuses on three areas, namely basic games skills, exercise and leisure sport/movement. Task analysis is applied to the complex skills in each area. The specific skill within an area is organized into a terminal objective and prerequisite objectives which are stated in behavioral terms and arranged by phasas in a simple to complex order.

The model is presented in a manual form and provides instruction for the teacher on such topics as gymnasium management, the curriculum, recording student progress, using volunteers, small group activities and parent involvement.

In addition to the programs discussed, all of which were designed for one or more specific type of handicapping condition, there are other models which have physical education programming possibilities for handicapped children. One among this group is Project Success[11], a prescriptive program and classroom delivery system which is designed for pupils, grades 1-4, with specific language disabilities and operates in three areas, namely a structural linguistic language program, motor perception training and technique modification across other curriculum areas. Another such program is "Every Child A Winner"[12] which is a movement-education program to mainstreaming and success experiences for groups K-3.

Two other physical education programs currently in their formative stage which will directly impact on the handicapped child are Project ComPAC and Project MOBILITEE. Project ComPAC[13] is designed to develop management guides, curriculum modifications and equipment modifications that will allow visually impaired and orthopedically impaired students to be served in the regular physical education program in grades one through twelve. Project MOBILITEE[14] is intended to impact on the moderately and severely handicapped by training the regular physical educator and special educator to provide physical education programming in the least restrictive environment. The project is further intended to provide physical education guidelines which identify similarities and differences of handicapped and non-handicapped as they relate to the teaching process.

As one surveys the traditional types of programming options in adapted physical education along with the more recently developed models as previously discussed, certain observations seem evident. First, not only are there a variety of programs and curriculum models in adapted physical education but many such programs have been evaluated as to their evidence to effectively produce motor and physical performance change of the handicapped child. The other observation is that adapted physical programs are attempting to address a wide spectrum of motor and physical problems not only confronting the common handicapping categories such as mental retardation, developmental disabilities, the physically handicapped and other health impaired conditions but also problems of the non-handicapped group in the areas of motor coordination, fitness and motor skill development.

## The Physician's Role in Adapted Physical Education

This presentation has examined the state of the art of two developments which have significantly influenced physical education for the handicapped. Though legislation is available and effective implementation of adapted physical education programming is an increasing reality, one cannot overlook the importance of the school or family physician in the school's effort to extend the potential benefits of physical education to handicapped children.

If the full contribution of adapted physical education is to be realized for each handicapped child, the cooperation and support of the physician in the administration of such programs becomes a critical factor. Among the ways the physician can be of valuable assistance in this matter are the following.:

- Respond to requests from the adapted specialist for information relative to the activity work load for a given child with a health related problem. It is suggested that such responses be in the form of recommendations as to the specific functional restrictions or limitations (i.e., range of motion, and activity tolerance) which must be considered by the physical educator in planning motor programs or specific exercises or type of training when necessary for select health problems.
- Support the development of comprehensive motor and physical programming for the handicapped child by avoiding the use of a "blanket" medical excuse from physical education. Comprehensive programming in physical education permits a range of activity stress or involvement and thus should be able to accommodate handicapped children capable of all levels of activity tolerance.
- When participating in the evaluation process as a member of an interdisciplinary team responsible for a child's Individual Education Plan, encourage the involvement of the adapted physical education specialists in the assessment process when a child has apparent special problems in the motor and physical performance areas.
- Assume an active role on a school's adapted physical education advisory committee in order to improve communications in general and promote uniform policies between the physicians in the community and the school's adapted program.

This article has tried to review select factors which have influenced the development of physical education for the handicapped in the 1970's. In addition, a list of some ways the physician could be a valuable contributor in the administration of programs for the handicapped in physical education was presented as well. It is hoped this material will assist the physician in better understanding the field of adapted physical education and the recent developments impacting on that field.

## REFERENCES

1. Federal Register Section 121 a. 14, August 22, 1977, p. 42480
2. Federal Register Section 121 a. 14, August 22, 1977, p. 42480
3. House Report No 94-332, 1975, p. 9
4. 29 USC Section 504, Statute 794
5. 34 Federal Register Section 104.47 (a) (1), 104.43 (a) and 104.47 (a) (1)
6. Project ACTIVE. TM Vodola,Township Ocean School District, Dow Avenue, Oakhurst, New Jersey 07755
7. I CAN. H Hubbard, PO Box 104, Northbrook, Illinois 60062
8. Project PEOPLE. Ed Long, Phoenix Union High School System, 2526 W. Osborn Road, Phoenix, Arizona 85017
9. M Loovis and W Ersing, Assessing and Programming Gross Motor Development for Children. Mohican Textbook Publishers, 439 N. Jefferson Street, Loudonville, Ohio 44842
10. J Dunn and J Morehouse, A Data Based Gymnasium, 1980, Instructional Development Corporation, PO Box 361, Monmouth, Oregon 97361
11. Project SUCCESS. R Metteer, Wayne Middle School, 312 Douglas, Wayne, Nevada, 68787
12. Every Child A Winner. MF Ownes, Irwin County Schools, Box 141, Ocilla, Georgia 31774
13. Project ComPAC. DN Reams, Dade County Public Schools, Exceptional Student Division, 733 East 57 Street, Hialeah, Florida 30013
14. Project MOBILITEE. Hopewell SERR Center, 5799 West New Market Road, Hillsboro, Ohio 45133

---

## Second Opinions

AMA Principles of Medical Ethics state a physician should seek consultation in doubtful or difficult cases. The Association also holds that the patient has a right to seek a second opinion if he wishes. Other Association statements stress, however, that a second opinion is not necessarily more valid than the first.

AMA supports controlled study of results of existing second opinion programs before proliferation and recommends such programs be voluntary and at physician, or patient's request. AMA opposes concept of mandatory consultation required by a third-party payer.

When consultation is required by a third-party payer, it should be at no cost to the patient.

# Work in Progress: Preventing Suicide Among Physicians and Other Members of the Health-Care Team

DOUGLAS A. SARGENT, M.D., J.D.

## The Physician Mortality Study

In June the American Medical and American Psychiatric Associations (AMA, APA) jointly launched a pilot study to explore the incidence, causes and preventability of suicide among physicians. Known and "possible" suicides in five States, Arizona, California, Pennsylvania, Oregon and Michigan, (plus a 10% random sample of all physician deaths for control) will be studied by the psychological autopsy method.[1] Under the leadership of Robert E. Jones, M.D.,* volunteers from each State's APA District Branch will interview the spouses and other survivors to develop a profile of physicians vulnerable to suicide. The project's ultimate goal is finding clues to the practical prevention and treatment of suicide.

The pilot study was designed using leads supplied by such pioneers as Strecker & colleagues (who described the vulnerability of medical students in 1936),[2] Vaillant (whose 30-year follow-up of a medical class extended our knowledge about "healthy physicians"),[3] Duffy & Litin (who described the psychiatric morbidity of physicians in 1964),[4] Pitts et al (who pointed out the special vulnerability of women physicians),[5] Modlin (who emphasized the role of drug abuse in physician suicide),[6] Blachly (whose search for hidden suicides spurred an accurate count of physician suicides),[7] and Ross (whose emphasis on detection and treatment spurred the profession to action).[8]

AMA staff, under E.M. Steindler,** will process the interview data after removing identifiers and observing other privacy safeguards. A panel appointed by Rogers Smith, M.D., Chairman of the Council on Scientific Affairs, will oversee the study for the AMA.***

## Preparing The Medical System For Change

An ounce of prevention is worth a pound of cure. This old saw implies that prevention is *possible*. Underlying the Physician Mortality Study is the assumption that suicide-prevention is not only possible, but that it is achievable with the help of education, assumptions that stand or fall with their demonstrability among health-care professionals.**** Members of the health-care team are intelligent, submit graciously to education (remember *continual* medical education?) and are accustomed to working together. We comprise a system of interdependent parts. Like all systems, the health-care, or medical, system resists changes, including those which permit the system to prevent suicide among its members. What follows is based upon the belief that no change in a system is possible unless the system itself permits the change. Education, itself a profound change, can take place only in a system which has been prepared to accept change. For several years organized medicine has been preparing itself for the changes necessary to prevent suicide in members of the health-care team who are vulnerable. So prepared, each component of the system may become an opportunity for benevolent intervention. Since I am a physician and

---

* Dr. Jones is Chairman, APA Committee on Physician Impairment. Members who will coordinate the study in each State are Stephen Scheiber, M.D. (Arizona), Robert Marvin, M.D., Tracey McCarley, M.D. and Sanford Izner, M.D. (California), Ralph Crawshaw M.D. (Oregon,) R. Jones, M.D. (Pennsylvania) and D. Sargent, M.D. (Michigan.)

**Mr. Steindler heads the AMA Department of Mental Health and has been a moving force in medicine's progress in this field. Janice Robertson of his staff is project coordinator.

***Panel Chairman, Douglas A. Sargent, M.D., J.D.: members: Ralph Crawshaw, M.D. (Oregon), Donald M. Keith, M.D. (Washington), J. Pat Tokarz, M.D. (Virginia) and Edward Seidel, Medical Student, M-4 (Texas.)

****Four hundred thirty-five employment groups are identified for the hospital workplace alone.

DOUGLAS A. SARGENT, M.D., J.D., Chairman, AMA Council on Scientific Affairs Panel, Physician Mortality Study, Adjunct Professor, Law, and Clinical Assistant Professor, Psychiatry, Wayne State University, Detroit, Michigan.

Note: A version of this paper was presented as a Distinguished Medical Scientist lecture at AMA headquarters, Chicago, March 30, 1981, and a longer version at a meeting on March 16, 1981 in Worthington, Ohio, which was sponsored by the Ohio State Medical Association.

have long thought about why physicians kill themselves, I will focus on physician suicide. The reader should consider the applicability of my remarks to other members of the health-care system.

### Can Physicians Heal Themselves?: An End-Stage Medical Marriage

I shall begin with a grim vignette that describes the downward course and fatal conclusion to a medical marriage between two health-care professionals, a psychiatrist and his wife, a laboratory technician. This case also adds detail to the sketchy picture we have of the suicidal physician's spouse.

For several years it had been rumored that a psychiatrist colleague was in trouble. Former patients reported their concern about his heavy drinking and inappropriate behavior, which amounted to "professional suicide." Concerned colleagues discussed what we might do to help him. Since I had supervised him when he was a resident, I was elected to intervene. A tentative approach to his wife, who had resumed work as a medical technologist to pay mounting bills, was met with an air of determined cheerfulness which did not permit further offers of assistance. When this weak effort was rebuffed, we lost our courage and withdrew.

His wife's pathetic facade of optimism was ineffactive in averting the approaching tragedy. Within a year her husband had killed himself. The trigger was his mother's stroke, news of which appeared to devastate him (she recovered). Throughout the presuicidal week, both the doctor and his wife continued to drive together daily to the medical office building where they both worked. The day before he died he held a garage-sale to "get rid of some junk." I bought a chain-saw from him. His face was flushed but he conversed normally. He told me that the chain-saw needed repairs but he didn't want to bother fixing it perhaps a symbolic, disguised prophecy —or a warning. I could not bring myself to speak to him about his personal problems in that setting. His body was found in the garage the next day.

After his death the doctor's widow continued to do lab work and appeared, to the casual observer, to "do well." No one pressed her for a deeper insight. A few years after her husband died, while doing a blood count on a meningitis patient, in a glaring violation of normal technique, she "accidentally" pipetted blood directly into her mouth. She soon fell ill. I chanced upon her as I was making rounds and visited with her. She looked toxic. Though she was lucid, she seemed unconcerned about her prognosis. Instead, she talked about her husband's death and her feeling of ostracism when she first tried to reenter the medical system as a medical technician. (Others say that she only imagined this: she and her husband had progressively isolated themselves over the years.) Within a few days she was dead of encephalitis. Their surviving children have *not* "done well." In the years after this couple died I have often felt that the medical system failed them.

### Are Doctors Different?

Is there any reason why a study should concentrate on suicide among the physician-members of the health-care team? Is there any justification for setting them apart from other patients? Do physicians contract only high-quality diseases? Is there something about physicians which makes treating them different from treating others? At the risk of seeming elitist, the short answer to these questions is: yes, physicians *are* different. I do not mean that physicians are better than others or that our diseases are rare or exotic. Obviously we fall ill in the same way that others do. When you prick us we bleed. But there still is something different about a sick physician. The difference lies in the way he or she interacts with the health-care system. To explain this apparent contradiction one must consider how the system works. Physicians are essential elements in the medical system.

### Cogs In The Medical System

While physicians *appear* to run the medical system, in truth, we are run *by* it. This demanding social organism recruits suitable individuals and indoctrinates them to fill niches vacated by disability and death, so that it can continue to carry out its mission: to care for the sick and dying. Recruits who prove unmalleable are ejected; those who remain often come to love their work. Some even find it so absorbing that they become totally identified with the doctor role to the exclusion of other interests. This is the dark side of the old joke with the punch-line: Help! Help! My son the Doctor is drowning!"

Like all systems, the medical system follows its own rules which are concerned with its own integrity and its mission, not the welfare of its individual components. Physicians who cannot meet the system's incessant demand for single-minded devotion to its needs may be sidelined. When the needs of other systems in which the physician also plays a part (the family, the legal or the economic systems, for example) clash with those of the medical system, the resultant conflict may so distort or damage the individual affected that he or she can no longer mesh smoothly with other colleagues. When this happens, the system may reject, even ostracize the misfit who is sacrificed for the good of the whole system. From the systemic viewpoint a faltering physician is expendable.

### The Physician And The "Sick Role"

The medical system is not structured to care for one of its own in the same way that it cares for ordinary patients. For example, the system requires ritual submission to medical authority of a kind most patients learn to perform automatically, often without noticing it. "Good patients" make these obeisances as preconditions for participation in the healing process; they pass unnoticed by patient and system alike—unless they are omitted. But physicians who become patients cannot acknowledge medical authority with aplomb, nor can physicians demand obedience from another physician with the same ease that they accept it from other patients. Recognizing personal illness and asking for help are other requirements of the "sick role" which is the *carte d'entre* to the privileges of patienthood that physicians also find difficult to manage for themselves. Like the runt of the litter or the aging buffalo, the sick physician is resented by "uncontaminated" colleagues, who instinctively turn their backs. No longer accepted in the physician role and untrained or unsuited to the patient role, the sick or disabled physician is a pariah. Under these circumstances getting medical help is no easy matter.

### No One Is To Blame

Both the loss of medical status and foreclosure from patienthood are automatic protective reflexes of systems in conflict: to the health-care system, the physician-patient is incompatible; to the collegial system, the sick physician has let the side down. Neither system can easily include an entity with such characteristics. No one is to blame. While most of us will admit that it is rather unseemly for a caretaking system that is capable of heroic feats of sensitivity and kindness to others to behave so heartlessly toward its own members, there is no "heart" involved. This is just the way systems operate, whose functional mandate is to preserve homeostasis at any cost. Defective parts disrupt homeostasis.

### What It Takes To Be A Doctor

Other aspects of the medical system also impact on the individual physician's life in ways that may make it difficult for some physicians and impossible for others to give long-term, efficient service. First, the highly competitive selection system guarantees that candidates will have an abnormally high tolerance for delay of gratification, will be capable of sustained effort without immediate reward, will be intensely self-critical and will display other traits usually associated with asceticism. These qualities are further refined by the rigors of training, which weed out the less durable candidates; the rejects may possess traits that are even more relevant to medical practice and patient care than are the monastic qualities which predominate among successful candidates. Less valued traits, such as capacity for interpersonal warmth, generosity, gregariousness, emotional flexibility, the ability to shift gears from high output to relaxation and self-indulgence, are precisely those most needed for effective function in another demanding system that most physicians also belong to—the family. It may be said that the high performer in the medical system may be handicapped in the family system. This fact alone may prime the medical family for malfunction.

### Family Vs. Practice: Systems Clash

While medicine may be a demanding mistress, even a home-wrecker, few physicians' spouses imagined that after courtship it would be the mistress and not the marriage that would win the contest for the physician's devotion. But when the demands of family life clash, as they must, with the "life-and-death" concerns of the practice, the latter not only win, but the family's needs may be made to seem trivial and its members selfish. The physician who fails to maintain an equitable balance between these two competitors for time and energy will either experience the discomfort of continual, wavering ambivalence, or will lapse into indifference toward the family's demand. The family system's shift of power to maintain homeostasis under these circumstances lends a "single-parent" quality to many medical families. The spouse's expectation of shared parenting with interludes of shared recreation often devolves into a rigid division of labor with little overlapping or mutuality: the practice runs the doctor and his spouse runs the family. At the end of a busy day, the doctor may retreat from interaction with the righteous feeling that his rest is well-deserved. This necessary respite usually coincides with the family's maximal need for his participation. When the family loses this competition it often does so grudgingly, since the doctor seems to be "doing nothing" and the family's needs seem to be unimportant to him.

The family system maintains its balance by keeping the doctor peripheral to its vital interactions. He hovers there, an uneasy satellite. From this position of relative isolation, the doctor may relate to his family by issuing "doctor's orders" which may be feared, secretly ridiculed, or simply ignored. When stress threatens such a physician, he cannot easily reenter the family circle for succor or emotional support. Thus failure to have negotiated a tolerable balance between the competing demands of each system may deprive a faltering doctor of what might have been his most effective support group—his family.

### The Professional "Family"

A third system, more like a family than a collegial system, exists unsuspected in the midst of these other two. This is the physician's "office family." Over the years there grows up around the physician an office or hospital staff attuned to his professional and personal needs. These supporters are usually headed by a nurse, or other female office assistant, who comes to have a personal and financial stake in the doctor's affairs. This group of loyal or at least possessive helpers often displays dynamics similar to those which characterize family life. Perhaps because their role is unclear, or unacknowledged, their ambivalence toward the doctor may be intense. Usually there is an uneasy truce between the two "family systems." When there is open warfare, the physician is the loser for his needs may be overlooked in the ensuing turmoil.

I will not develop this theme further here, but simply note that one may find other subsystems within which the physician revolves, some with him at the center, others in which he plays an apparently peripheral yet essential role. All of these are parts of the health-care delivery system which we ignore only at our - or more properly, at the jeopardized physician's - peril. From the perspective of the medical system, the plight of the faltering physician is fatal but not serious. The system will jettison the defective doctor, replacing him or her from a pool of waiting "spares." Of course, the physician affected and those who care about the lost individual in a personal way are the real victims. Increasingly it is apparent that a great economic loss, too, is involved when a physician is lost to the system. With the cost of training a specialist hovering around $200,000, and considering the penumbra of health-related persons and enterprises that depend upon the physician for employment, a rational appreciation for the economics involved urges us to prevent physician suicide even if humanitarian motives are discounted.

## Conclusion

Because of the medical system's paradoxical attitude toward "its own," clear-eyed (or disenthralled) agitators have persuaded organized medicine to change its approach to "wounded" members. The replacement of the herd-instinct (rejection) by a new approach (rehabilitation) results from this clearer view. A skeptic might point out that it is still impairment, a systemic threat, that legitimates our interest in impaired colleagues. Terms reflecting compassion are still reserved for "real patients." Nevertheless, activists have generated enough momentum to guarantee that other beneficial changes will follow. Steindler has organized this momentum into effective form. Soon we should bring to bear the full panoply of science to the task of rescuing faltering colleagues. Those among us who recognize our kinship with impaired colleagues, who know that our medical life-style makes us all occasionally somewhat impaired (remember the 100-hour week?), and that to falter may not indicate early deterioration but excessive stress, will continue to demand a more rational use of our resources to help ourselves.

## REFERENCES

1. Schneideman E, Faberow N, Clues to Suicide. New York, McGraw-Hill, 1957
2. Strecker E, Appel K, Palmer H, Braceland F, Psychiatric studies in medical education. Am J Psychiatry 92:937-958,1936
3. Vaillant G, Theoretical heirarchy of adaptive mechanisms: a 30 year follow-up of 30 men selected for psychological health. Arch Gen Psychiatry 24:107-118, 1971
4. Duffy J, Litin E, Psychiatric morbidity in physicians. JAMA 189:989-992, 1964
5. Pitts FN Jr, Schuller AB, Rich CL, Pitts AF, Suicide among U.S. women physicians: 1967-1872. Am J Psychiatry 136(5): 694-696,1979
6. Modlin H, The disabled physician. J Kansas Med Soc 76 no 12:295-297 & 324, 1975
7. Blachly P, Disher W, Roduner G, Suicide by physicians. Bul Suicid 1-18, 1968
8. Ross M, Suicide among physicians. Psychiatry in Medicine 2:189-198, 1971

---

## Connecticut Hospital Room Charges Among Lowest in Northeast

According to data compiled by the Health Insurance Association of America and reported in the AMNews, the average daily rate for a semi-private room in Connecticut as of January, 1981, stood at $139.47. This was below the national average of $143.85, and was third lowest among the states in the Northeast region, where costs averaged $151.00 a day, and ranged from $132.47 in Vermont to $170.46 in Massachusetts.

—AMNews, August 14, 1981

# Report from the Assembly

## (First of Two Parts)

JOSEPH S. COATSWORTH

The 1981 General Assembly session was probably one of the most important in recent memory for Connecticut's 35 general hospitals. This is because it was the session during which the state Commission on Hospitals and Health Care (CHHC) underwent "Sunset" review by the State Legislature.

Begun in 1977, "Sunset" review is a process in which state agencies, such as the Commission, are examined to see whether the purpose for which they were established still exists. For the Commission, the 1981 review represented the first time its operations had been so thoroughly looked at since it was created in 1973.

The Commission's "Sunset" review started in 1980, with a 10-month study by the Assembly's Legislative Program Review and Investigations Committee. During the course of this study, members of the committee conducted hearings and heard testimony from both hospital and Commission representatives and from others. As a result of this testimony and other research, the committee concluded that there were indeed a number of "deficiencies" in the regulatory process as practiced by the Commission. As described by the Committee, those "deficiencies" included:

1. Too-frequent agreement on the part of the 17 part-time commissioners with decisions made at "lower levels of authority" by Commission staff.
2. Hampering of the entire regulatory process by the "extensiveness" of the Commission's regulatory powers.
3. A need for "streamlining" both the Commission's budget review process and its Certificate-of-Need reviews (CON), the latter being the procedure the Commission uses to approve or deny requests for new hospital services, the purchases of new equipment, new construction, etc.
4. A lack of sufficient written criteria for use when making a decision.

Because on these and other conclusions, the Program Review Committee made the following four major recommendations with regard to the Commission's future:

1. That the CHHC begin a pilot program for biennial, as opposed to annual budget review. The idea here was to have no more than half of the hospitals subject to review in any given year, and thus lighten the workload of the CHHC staff and commissioners.
2. That the threshold for projects requiring CON review be raised to $150,000 from $100,000. Again, the idea here was to lighten the Commission's workload by eliminating the necessity to review relatively small projects and purchases and conform to the federal law.
3. That the size of the Commission be changed from 17 to 11 members, including seven consumers (five appointed by the Governor, one each appointed by the Speaker of the House and the President Pro Tempore of the Senate), three representatives of the health-care industry, including one hospital administrator, one nursing home administrator and one licensed health-care professional, and one representative third-party payor.

   The Committee also recommended that the present state Commissioners of Health, Mental Health and Insurance be allowed to continue to serve on the Commission, but as ex-officio, nonvoting members.
4. That each commissioner shall serve on at least one-third of the budget panel hearings held in a

---

JOSEPH S. COATSWORTH is the Connecticut Hospital Association's Vice President of Government Relations. A veteran of five terms in the state legislature, he served as both Assistant Majority Leader and later as Deputy Speaker in the state House of Representatives.

> two-year period; that each shall serve on at least 10 CON panel hearings over two years, and that no commissioner shall serve on more than 25 percent of the panel hearings in the same period. The goal here was to eliminate the dominance of panels by a small group of Commissioners, as had too often occurred in the past.

Hospital officials, as they reviewed the work and recommendations of the Program Review Committee, generally agreed that the committee had made a thorough effort to identify some of the problems that existed in connection with the Commission's operations, and had also attempted to find solutions to these problems.

While these officials agreed that much of the conflict that had occurred in the past involving hospitals and the Commission stemmed from the "extensiveness" of the Commission's regulatory powers, it was not felt that actions such as biennial budget review would really remedy the situation, since that would only spread over a two-year period those problems that now occurred annually, such as inaccurate inflation predictions, etc.

Rather than simply spread the budget review process over a longer period of time, hospital officials felt reform was needed that would change the process so that, instead of punishing hospitals for not meeting its arbitrary standards, the process would reward them if they were able to hold down costs on their own. More carrot and less stick was to be the concept that would be the major theme of the Connecticut Hospital Association's Legislative Program for 1981. More on this program next month.

**Sailing Adventure**

RELAX ABOARD A LUXURY YACHT.
WANT TO SAIL THE CARIBBEAN?
WANT TO BE A YACHT OWNER?

For the next 5 years — at today's prices. You can DO IT NOW! You can own 1 or 2 weeks a year, aboard ship, a TIME-SHARE OWNER OR CHARTER — BAREBOAT OR CREWED.

**SINGLES** — Bring your own party!

**MATED**—Bring your family and friends!

*Yachting Internationale*
833 SUMMER ST.
STAMFORD, CT 06901/**348-2416**

IS UNCLE SAM
DOCKING YOU
50%?

WE WILL BERTH YOU IN
A SHELTER

?Why BUY a sailboat?

**ASK US--WE'LL TELL**

Yacht/Mgmt. Offered
CALL or WRITE:

*Yachting Internationale*
833 SUMMER ST.
STAMFORD, CT 06901/**348-2416**

# Medical Staff Privileges and the Law: A New Jersey Perspective

VINCENT A. MARESSA, ESQUIRE

New Jersey and California have accumulated a significant body of case decisions regarding applications to hospital medical staffs, and the granting, expansion, and denial of delineated clinical privileges. This article will review the New Jersey experience and hopefully provide an insight into developmental law in an area of prime concern to the medical profession.

### *Falcone v. Middlesex County Medical Society*
### *62 N.J. Super. 184, 162A2d 324 (1960), affirmed 34 N.J. 582, 170A2d 791, 89 A.L.R.2d 952*

As is usually the situation with major legal developments, the opening salvo involved a highly unique set of circumstances and a slightly different issue than one would expect. This case was brought to the attention of our Courts in 1960 and was finally resolved in 1961. It achieved national publicity and continues to be cited extensively today. It is, however, frequently misunderstood and often erroneously interpreted.

The Plaintiff, Doctor Falcone, possessed a plenary license* to practice medicine in New Jersey. He had secured that license through successful examination by the State Board of Medical Examiners in New Jersey. He was admitted to examination as the holder of a degree from a recognized school of osteopathy. His application to the county and state medical societies had been rejected because he did not possess the degree of "medical doctor." At that time all private hospitals (non-government) in New Jersey required society membership prior to staff appointment. Doctor Falcone then applied to a European medical school, was granted advance standing, and was awarded a degree after an abbreviated course of study. A significant number of members of the county and state medical societies had degrees from that same school.

Doctor Falcone then applied for membership in the county and state medical societies, and also for privileges at a local hospital. The societies refused to grant membership because they did not recognize the validity of his European "M.D. degree." The hospital did not grant privileges because he was not a member of the county and state medical societies. Doctor Falcone filed suit!

The Court was intrigued by the rather curious factual circumstances and wondered why the societies did not recognize Doctor Falcone's degree when the issuing university did not question it. The Court also noted that degrees from the same university issued prior to, and subsequent to the one issued to Doctor Falcone, had been acceptable to the societies when other physicians were involved. The Court ruled:

a) The societies had acted in an arbitrary and capricious fashion in denying membership and that the consequence was a very real economic loss to the physician since he could not admit patients to local hospitals.

b) The hospital could not rely upon the requirement of medical society membership to deny privileges since the denial by the societies was unreasonable.

The medical societies subsequently accepted the application and voted the Plaintiff into membership. He then secured his hospital staff appointment.

### *Greisman v. Newcomb Hospital*
### *192A2d, 817 40 N.J. 389 (1963)*

This case focused more directly on the issue of staff privileges, but does possess a slightly different concept.

---

*Full license to practice medicine and surgery.

---

VINCENT A. MARESSA, Esquire, Executive Director, Medical Society of New Jersey, 1973 to present. Private practice of law, 1968 to present. Mr. Maressa is a graduate of the Temple University School of Law, Philadelphia, Pa., 1967, Juris Doctor. Admitted to practice in New Jersey and Federal Courts, April 1968. Member of the New Jersey State Bar Association and American Bar Association; member of New Jersey State Bar Association Medical-Legal Liaison Committee; delegate of the New Jersey Supreme Court Judicial Conference and secretary-treasurer of the New Jersey State Medical Underwriters, Inc. (Physician Professional Liability Insurance Co.)

The Plaintiff, Doctor Greisman, was a graduate of an osteopathic college and like Doctor Falcone, possessed a plenary license to practice medicine and surgery in New Jersey. Newcomb Hospital required staff applicants to be members of the county and state medical societies. Unlike Doctor Falcone, the Plaintiff had no intention of applying to any medical school for an M.D. degree. He argued that the only community hospital in his area should consider his application on its merits - that he had a professional degree from a recognized osteopathic school, a full license to practice medicine and surgery, and was held in high regard in the community.

The Court held that the hospital's power to pass on staff membership applications was a fiduciary power to be reasonably exercised for the common good, especially when the hospital was non-profit, received public funds, and was the only hospital in a significant geographic area. Therefore, the hospital could not exclude Doctor Greisman from the staff simply because he was not a member of the county and state medical societies. This was especially so since it was demonstrated that he could not then pursue an M.D. degree without significant economic loss.

The above two cases established several principles which have formed the bedrock of New Jersey law on hospital privileges.

a) The hospital may determine what physicians are to be granted privileges.
b) Each applicant must be fully and fairly considered and a denial must be reasonably based on the factual data under consideration.
c) Hospital privileges in New Jersey are necessary to the function of the fully licensed physician and the economic rewards of medical practice.
d) A bylaw requirement of county and state medical society membership may not be utilized in all cases as a basis for denial of staff privileges (i.e., when the licensed physician is ineligible for society membership because of his underlying degree.

### *Sussman v. Overlook Hospital Association 222A2d 530, 92 N.J. Super 163, Affirmed 231A2d 389, 95 N.J. Super 418 (1967)*

This case elaborated on the objective, subjective, and qualitative assessments that a Board of Trustees and a medical staff should perform when considering an application for privileges.

Doctor Sussman, though academically and clinically credentialed, was denied staff privileges because of his reputation as a disruptive malcontent at other hospitals.

The Court in its consideration of this case established the following rules of law:

a) Compliance with minimum requirements of the bylaws of a hospital does not make the granting of staff privileges automatic. The Board of Trustees has the right to reject applications if it acts in a fair manner and for valid reason.
b) The Board of Trustees owes to an applying physician the duty to conduct a more substantial inquiry into his fitness than mere unilateral inquiries to administrators at hospitals where he was a staff member.
c) Physicians should not be deterred from speaking out against abuses in hospital practices. They should not have to fear that their criticisms, made to improve patient care, may result in denial of privileges simply because they have so spoken.
d) The Board of Trustees may reasonably consider the factor of prospective disharmony in considering applicants.
e) An applicant is entitled to a hearing and personal appearance, with the opportunity to present witnesses and documents if he so desires. This hearing, however, does not have to be conducted in a legal trial-type fashion. And the Board must gather enough information to be fully informed so that it may make an intelligent and reasonable judgment based in good faith on the facts before it. The Board should establish a policy as to whether applicants may be represented by legal counsel at such a hearing, and how that counsel may or may not participate in the hearing.

### *Guerrero v. Burlington County Memorial Hospital 360A2d 334, 70 N.J. 344 (1976)*

This case established some rather remarkable law on a number of issues and warrants careful consideration in this paper. The physician in question applied for general surgical privileges at a satellite facility about 45 miles from the main hospital facility. Memorial Hospital had adopted policies of limiting staff appointments at the remote satellite location to individuals on their staff at the primary site. They argued that staff requirements, sound management, peer review, quality assurance, and proper utilization made such a policy reasonable and appropriate.

Doctor Guerrero did not have a staff appointment at the Burlington County Memorial Hospital, but did hold appointments at other hospitals in another county. He was within reasonable driving distance of the satellite hospital but not within a reasonable distance of the base hospital.

The Court indicated that hospitals may not routinely deny privileges to doctors moving into an area but might limit appointments on a rational, reasonable, and lawful basis in furtherance of the interests of both the public and the medical staff.

Where a facility is designed to accommodate a very limited number of patients and is intended to afford treatment of urgent and emergency cases, a showing that an augmented surgical staff will engender additional demands on the facility provides a thoroughly rational basis for the exercise of discretion by hospital authorities to deny surgical privileges.

Up to this point in the case, the Court was really discussing established law that is commonly referred to as the "rule of reason." It noted that a decision by a hospital board should be treated by a reviewing Court like the determination of an administrative agency. If that denial is supported by substantial credible evidence and is not arbitrary or capricious, the Court should refrain from substituting its judgment for that of the hospital board. The Court then went on to state that a reviewing court, however, would have the obligation to remain alert "to strike down action that is discriminatory or unfair."

In closing, the Court found that the failure of the hospital to advise the Plaintiff prior to hearing of reasons for denial of his application was not a basis for reversal where valid reasons were in fact given at the time of final denial following the full hearing. It did suggest, however, that it would be more judicious to provide denied applicants with the specific grounds of denial in order to enable the applicants a fuller opportunity to respond more effectively to the precise reasons that have led to their initial rejections.

Hospital administrators and board attorneys viewed this dicta as the "first shoe dropping."

### *Garrow v. Elizabeth Hospital and Dispensary 401A2d 533, 79 N.J. 549 (1979)*

Well - the other shoe dropped! In a case with complicated factual and procedural issues, and enough tactical movement to present a complete textbook on legal motion practice, the State Supreme Court firmly merged the doctrines of the "rule of reason" and "fundamental fairness" (also known as due process when applied to Courts) and made them applicable to hospital staff appointments. This case picked up where Sussman and Guerrero had terminated.

The Court began by reiterating its position equating the scope of review to the standard applicable to an adverse determination by a governmental agency. It then held:

a) "Fundamental fairness" dictates that a hospital afford the denied applicant an opportunity to appear and present witnesses and material in support of his position, and contradict or explain the bases asserted for the hospital's proposed denial. *The physician has the right to have counsel present at hearings regarding his application subject to reasonable rules laid down by hospital personnel in charge of such hearing.*

b) The doctor, although not necessarily entitled to learn the source of information, does have the right to *prehearing discovery* of the relevant and material data underlying the hospital's proposed rejection of his application.*

### Conclusion

Applications for hospital staff appointments are treated as a significant property right. The applicant has a right to counsel throughout the process. The procedure and mechanism must be designed in such a fashion as to afford fundamental fairness. The decision must be supported by substantial creditable evidence, and the entire matter is subject to judicial review.

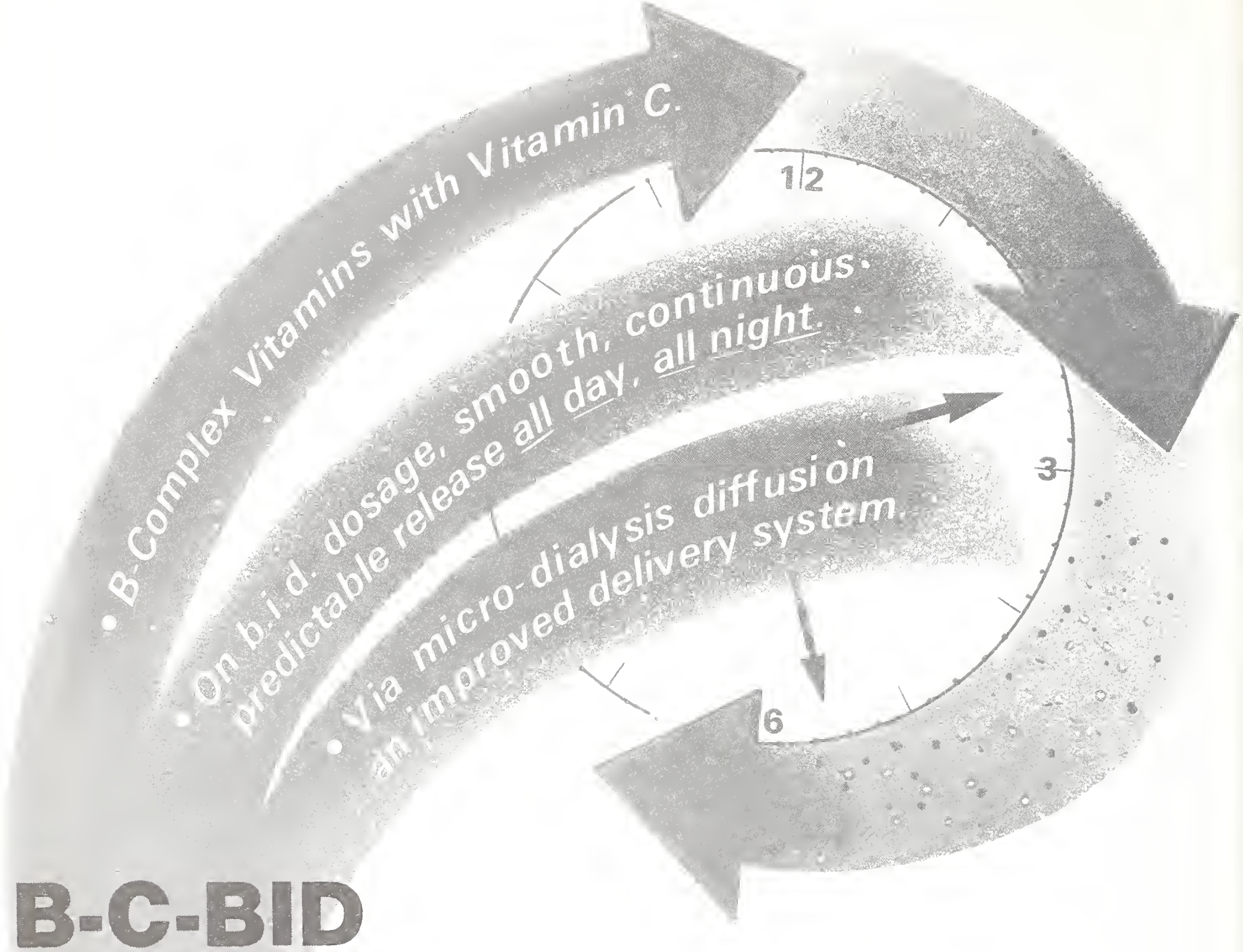
There is scant decisional law dealing with a curtailment of privileges or loss of privileges in New Jersey. There is little doubt, however, that the same concepts apply.

While the Court in the Garrow decision limited its applicability to the voluntary hospital, it is reasonable to assume that the same legal safeguards will be held to prevail in the public hospital sector if at all practical. Each case will, of course, stand or fall on its individual factual basis and circumstantial tenor.

I have not attempted to discuss all applicable cases in this article, but have chosen only those of landmark significance. I also opted to present them in a chronologial order since a logical progression flowed from one into the other. An understanding of these developments is necessary to physicians and hospital boards in New Jersey, and if matters follow their usual course these same concepts will be applied in other jurisdictions.

---

*Prehearing discovery means that all documentary evidence of the hospital which forms the basis of the denial will be available for inspection and copy by the contesting doctor prior to the hearing.


• B-Complex Vitamins with Vitamin C.
• On b.i.d. dosage, smooth, continuous, predictable release all day, all night.
• Via micro-dialysis diffusion an improved delivery system.
12
3
6

# B-C-BID
## CAPSULES
### Wherever B-Complex with C Vitamins are indicated.

With B-C-BID there is maximum utilization and no "peaks and valleys" of absorption, as is common with ordinary capsules or tablets. No regurgitation. No after-taste.

For the patient who is debilitated, chronically ill, postoperative, on an inadequate diet for any reason—and wherever B-Complex with C will help speed the healing process, consider B-C-BID capsules.

EACH B-C-BID CAPSULE CONTAINS:

| | |
|---|---|
| Vitamin B-1 (Thiamine Mononitrate) | 15 mg |
| Vitamin B-2 (Riboflavin) | 10 mg |
| Vitamin B-6 (Pyridoxine) | 5 mg |
| Niacinamide | 50 mg |
| Calcium Pantothenate | 10 mg |
| Vitamin C (Absorbic Acid) | 300 mg |
| Vitamin B-12 (Cyanocobalamin) | 5 mcg |

DOSAGE: For continuous 24 hour therapy, one capsule after breakfast and one after supper.

**Samples on request.**

**GERIATRIC PHARMACEUTICAL CORP.**
397 Jericho Turnpike, Floral Park, N.Y. 11001

PIONEERS IN GERIATRIC RESEARCH SPECIALTIES.

ADVERTISED ONLY TO THE MEDICAL PROFESSION.

DEVELOPERS AND SUPPLIERS OF CEVI-BID • GER-O-FOAM • ISO-BID

# Coping with the Stress of Medical Practice

JOHN INGRAM WALKER, M.D.

Up to 10% of the nation's 400,000 physicians have a problem with alcoholism, drug addiction, depression, or suicide sometime in their career.[1] To put the seriousness of the problem another way: in the United States approximately 700 physicians a year (the equivalent of graduates from seven medical schools) are lost to suicide, alcoholism, or drug addiction.[2] According to Jones[3] one in every 100 to 400 doctors is addicted to drugs; the suicide rate for doctors is at least 15% higher than for other individuals when matched for age. Moreover, only 17% of doctors ultimately hospitalized for mental problems had sought care before they became so ill as to require hospitalization. This article will discuss factors contributing to emotional problems in physicians including the stresses of medical practice and the tendency for physician's to overwork. The article will conclude with a discussion of methods physicians can use to combat stress and to develop a more stable work attitude.

### The Stress Of Medical Practice

Mawardi[2] discussed the most common dissatisfactions with medical practice listed by Case Western Reserve School of Medicine (CWR) graduates of 1935 through 1945. Almost 50% of the physicians reported time-pressures at work and the lack of leisure time to be the major source of stress; 26% of the physicians listed therapy failure or the inability to help certain patients as a major stress factor; another 24% mentioned office details and paperwork as being stressful. Problems with other physicians, financial considerations, insufficient medical facilities, and isolation due to specialization were mentioned much less frequently. More recent graduates from CWR (classes of 1956 through 1965) listed some additional worries including the fear of malpractice suits, the necessity of practicing defensive medicine, and increasing pressure by professional societies for peer review.

Because of the long hours of practice, physicians begin to feel alone and out of touch with society. When therapeutic failures are encountered, personal demands for excellence and the expectation of society for errorless medicine increases frustration. If patients fail to do as well as expected, there is the threat of a malpractice suit. Hostile, dependent, and demanding patients and patients with chronic, irreversible illnesses may cause the physician to develop a sense of disappointment and personal hopelessness. Finally, there is peer review, paper work, and the feeling of being scrutinized by "big brother." With so many ill people and so few cures, giving-up becomes an almost understandable response to unmeetable demands.[4]

### Overwork

Hall and Associates[5] have described a professional burnout syndrome found in physician drug and alcohol abusers. Characterized by the inability to maintain work performance and a decline in efficiency and initiative, this condition is similar to the overwork syndrome described by Rhoads[6]. In studying groups of individuals susceptible to overwork—business executives, lawyers, doctors, accountants, and housewives—Rhoads reported that instead of complaining of being overworked, those individuals with the overwork syndrome complained that they are unable to work as well as they would have liked.

Symptoms of overwork include fatigue, irritability, sleep disturbance, difficulty concentrating, depression, and physical complaints. Alcoholism and drug abuse may result from attempts at self-treatment. Because the overwork syndrome may mimic a number of other illnesses including anxiety, depression, organic brain syndrome, and multiple physical illnesses, diagnosis depends on a consideration of the work attitudes of the individual.

### Causes of Overwork

Rhoads[6] lists several factors associated with the overwork syndrome. Some individuals attempt to overcome insecurity and fear of failure with work; others identify with a demanding, unpleasant parent, making

---

JOHN INGRAM WALKER, M.D., Director of Continuing Education in Psychiatry; Assistant Professor of Psychiatry, Duke University Medical Center, Durham, NC.

the parent's demands a part of their own conscience. In still others, overwork appears to be an attempt to make-up for physical limitations such as poor health or aging. In common with almost all physicians who overwork are: (1) the need for approval and (2) an attempt to solve problems of aggression and guilt by excessive work done in a compulsive manner (found in the Type A personality). These last two characteristics will be discussed below.

### Need For Approval

Physicians, seeking approval from almost everyone, may use work as a primary method to enhance self-esteem and gain social approval. Unable to say "no" to patients, these physicians cultivate few outside activities which bring pleasure or satisfaction. Because these individuals put excess demands on themselves, they eventually become burdened by fatigue which, in turn, leads to decreased effectiveness. Lengthening their work-day to compensate for a diminished ability to produce efficiently, overworked physicians may become tired, but they eliminate exercise and recreational time in a desperate attempt to meet the demands placed on themselves, which only tends to further decrease their recuperative capacity. Esculating frustration produces more frenetic activity and the resulting vicsious cycle eventually tightens to produce symptoms of overwork.

The increased work load these physicians impose on themselves causes a deterioration in their marriage and family life undermining their main source of nonwork-related support. Likewise, trying to crowd more work into an already overloaded schedule causes individual patients to complain about the lack of attention; and the increasing possibility of errors produces self-criticism and occasionally even criticism from colleagues. Paradoxically overwork, rather than resulting in approval, eventually causes physicians suffering from this syndrome to be criticized by patients, family, colleagues, and themselves.

### Type A Personality

The predilection to overwork is probably related to many of the qualities of the Type A personality discussed by Freidman and Rosenman.[7] They have listed 13 traits of Type A personalities. The more yes answers you give to the following questions the greater the likelihood that you have Type A tendencies:

1. Do you utter the last few words of your sentence far more rapidly than the opening works? (This characteristic implies impatience.)
2. Do you move, walk and eat rapidly?
3. Do you become impatient with slow highway drivers?
4. Do you try to do two things at once?
5. Do you try to dominate conversations?
6. Do you feel guilty when you try to relax?
7. Do you fail to observe the beautiful things around you?
8. Are you preoccupied with material possessions?
9. Are you constantly trying to crowd more and more tasks into your work schedule?
10. Do you feel competitive with other people who you feel are like you?
11. Do you frequently find yourself clenching your fist or grinding your teeth?
12. Do you believe that your success depends on your ability to get things done faster than others?
13. Do you find yourself evaluating your activities in the terms of "numbers?"

Methods for overcoming Type A behavior will be discussed later.

### Dealing With Stress

From general approaches for dealing effectively with the stress of medical practice will be discussed in the remainder of this article. They are:

1. Reducing frustration
2. Reducing tension
3. Cultivating a support system
4. Overcoming Type A behavior

### Reducing Frustration

Hans Selye[8] the foremost authority on stress contends that although there are great individual differences in the amount of beneficial stress a person needs to assure security and happiness, in general, when so much stress occurs that tasks cannot be successfully completed, frustration (distress) results. To prevent frustration, Selye offers these suggestions:

(1) Strive for the optimal stress level that allows the successful completion of tasks: knowing one's limitations can prevent nonproductive work which leads to frustration and distress.

(2) When completion of one task becomes impossible, change activities: stress on one system helps relax another.

(3) Substitute demands made on the mind for demands on the body in altering cycles: the human body wears longest when it wears evenly.

### Reducing Tension

The unavoidable frustrations of medical practice produces diffuse anxiety and physical tension that interferes with productivity and the pursuit of pleasure. The remedy for excess tension is the ability to relax as quickly and completely as possible. Although a number of techniques successfully produce relaxation, perhaps the most popular has been Transcendental Meditation. Individuals taught meditation by a trained instructor are given a secret phrase, called a mantra. While sitting in a comfortable position, the meditator then repeats this phase mentally over and over again. Practitioners meditate 20 minutes, twice daily. Benson[9] found that meditation appears to be an effective method for reducing oxygen consumption, respiratory rate, heart rate, and blood pressure. In addition, the blood lactate (associated with anxiety and skeletal muscle metabolism) is decreased; metabolic rate is lowered; and drug use, alcohol consumption, and cigarette smoking diminish. Alpha waves increase in frequency and intensity during meditation, indicating that this altered state of consciousness differs from sleep.

Additional tests have shown that the use of a specific secret mantra taught Transcendental Meditation instructors is unneccessary. Any phrase works just as well. The following set of instructions recommended by Benson[9] (p. 162-3) represents a modified form of meditation termed the "relaxation response":

1. Sit quietly in a comfortable position with your eyes closed.
2. Deeply relax all your muscles, beginning at your feet and progressing up to your face.
3. Breathe easily and naturally. As you breathe out, say the word, "One," silently to yourself.
4. Continue for 10 to 20 minutes. When you finish, sit quietly for severly minutes, at first with closed eyes and later with opened eyes opened.
5. Maintain a passive attitude and permit relaxation to occur at its own pace. When distracting thoughts occur, try to ignore them by not dwelling upon them and return to repeating "One."

Although the physician may be unable to eliminate many of the situations that produce tension and mental fatigue, practicing the relaxation response is an effective mechanism that counters some of the harmful psychological and physiological effects of a stressful occupation. Physicians who want to know more about this technique would do well to read *The Relaxation Response* by Herbert Benson[9], M.D. (William Monrow).

### Cultivating A Support System

In caring for others, physicians often neglect their personal needs for love, warmth, and understanding. Physicians who learn to accept support from others treat themselves as humanely as they treat their patients. Lurie[10] offered the following suggestions for avoiding self-neglect:

(1) Attend medical society meetings for social and supportive aspects as much as for the learning component.
(2) Share interests with people outside the medical profession.
(3) Share feelings with others.
(4) Ask others for help.
(5) Consider group practice for the support it offers.
(6) Have periodic life-planning sessions with the family.

### Overcoming Type A Behavior

Friedman and Rosenman[7] in *Type A Behavior and Your Heart* have devised several drills designed to combat the three basic characteristics of Type A behavior: 1) "hurry" sickness; 2) hostility; and 3) the tendency to be preoccupied with material possessions at the expense of spiritual, mental, and cultural development. A summary of the most important of those drills will be listed below. Those individuals who suspect they might be Type A (most physicians are) would do well to study the book in detail

### Drills Against "Hurry" Sickness

Friedman and Rosenman list 18 drills against "hurry" sickness. A condensed version of nine of those drills are included here:

1. Try to figure out why you are always rushing.
2. Remind yourself that life is always full of unfinished business.
3. Listen quietly to others.
4. Ask yourself, "Will this task matter 5 years from now?"
5. Ask yourself, "Do I really have anything to say that others want to hear or should hear right now?"
6. Remind yourself that no enterprise ever failed because it was executed too slowly, too well.
7. Remind yourself: If you don't protect your allotment of time, no one else will.
8. Interrupt a task that induces tension and stress before it is completed.
9. Practice relaxation drills such as the relaxation response once or twice daily.

### Drills Against Hostility

Four drills against hostility proposed by Friedman and Rosenman are condensed here:

1. Strive to diminish your own sensitivity to affronts and increase your awareness of the needs of others.
2. Don't inflict your ideals on others. (Those that are harsh on others are extra harsh and demanding on themselves).
3. Even though it may appear contrived and hypocritical—SMILE. (To change inward feelings, first change external appearances).
4. Take time to give thanks to others for their help.

### Drills To Improve Your Spirit

Friedman and Rosenman list nine exercises under one heading "A drill toward things worth being." Four of those exercises are condensed below:

1. Remind yourself that once a reasonable economic security is established, improving

your intellect and personality is more important than acquiring material possessions.

2. Seek time to be alone.
3. Cultivate spiritually rewarding friendships.
4. Allocate time for reading classical literature.

## SUMMARY

This article has discussed some of the factors that contribute to emotional problems in physicians. Among these factors are the lack of leisure time, the inability to help some patients, fear of malpractice paperwork, and increasing pressure by professional societies for peer review. The need for approval and Type A personality traits were discussed in their relationship to overwork syndrome. Finally, some methods for reducing tension and work stress were mentioned can be summarized below.:

1. Exercise vigorously for at least 20 minutes each day (physical exercise produces relaxation which combats mental frustrations).
2. Practice relaxation response 10-20 minutes daily (diminishes mental and physical tension).
3. Be aware of muscle tension throughout the day stretch; breathe in deeply and out slowly; relax).
4. Read for inspiration (the classics).
5. Laugh loudly (at self and with others).
6. Talk about ideas, events, and feelings (not about others).
7. Become completely involved in a hobby (diversion prevents fatigue).
8. Limit to two alcoholic drinks daily (Alcohol in moderation increases longevity).
9. No smoking (increases blood pressure and pulse).

Physicians who follow the methods for reducing stress outlined in this article will cultivate a measure of equanimity that will enable them to take better care of their patients while at the same time preventing personal emotional problems.[11]

## REFERENCES

1. Walker J I, Prescription for the stressed physician. Behavioral Medicine 7(9):12-17, 1980
2. Mawardi BH: Satisfactions, dissatisfactions, and causes of stress in medical practice. JAMA 241(14):1483-1486, 1979
3. Jones RE: Mentally ill physicians. The Sciences 1:19-21, 1979
4. Shulman L: On encountering hopelessness. JAMA 238 (20): 2149-2150
5. Hall RCW, Gardner ER, Perl M: et al Psych Opinion 4:12-17, 1979
6. Rhoads JM: Overwork. JAMA 237(24):2615-2618, 1977
7. Friedman M, Rosenman R: Type A Behavior and Your Heart. New York: Alford Knopf 1974
8. Selye H: Stress Without Distress. Philadelphia: JB Lippincott 1974
9. Benson H: The Relaxation Response. New York: William Morrow 1975
10. Lurie HJ: Clinical Psychiatry for the Primary Physician. Nutley NJ:Hoffman-LaRoche Inc 1976
11. Walker JI: Clinical Psychiatry in Primary Care. Menlo Park CA:Addison-Wesley 1981

---

## NUTRITIONAL CHALLENGES IN CANCER

Thursday, October 29, 1981, 9 a.m. - 4 p.m.
Laurel View Country Club, Hamden, CT

COVERING

- current concepts on the role of diet and nutrition in cancer risk assessment
- taste abnormalities in cancer patients
- management of nausea and vomiting
- causes of anorexia and cachexia
- malnutrition and infection
- maintaining optimal nutrition at home
- maintaining nutrition at a hospice

SPONSORED BY: The American Cancer Society, Conn. Div. Inc. and Yale Comprehensive Cancer Center

COST: $18.00 including lunch

FOR ADDITIONAL INFORMATION call American Cancer Society or Cancer Information Service 1-800-922-0824

# Brain Death: A Reevaluation of the Harvard Criteria

SHEILA TAUB, J.D.

On Saturday, April 4, 1981, several hundred physicians, attorneys, theologians, and laymen gathered at the Massachusetts Eye and Ear Infirmary Auditorium in Boston for a National Conference on Brain Death. The purpose of the conference was to re-examine the criteria for determining brain death which had been promulgated by the Harvard Committee on Brain Death[1] in 1968 in the light of developments which have occurred since then, and to try to achieve a consensus on the following issues: 1) the definition of death; 2) criteria to be used to determine when death has occurred; 3) who should establish and/or apply such criteria; 4) whether legislation defining death should be enacted, and 5) if so, what form such legislation should take.

The conference was deliberately designed not to address the more complex issues, both medically and morally, of the appropriate care of patients in a persistent vegetative state (such as Karen Ann Quinlan, for example), or the "right-to-die" of patients (whether competent or incompetent) who are irreversibly, terminally ill. It was thought that compared to those issues the issue of brain death was a relatively simple one on which substantial agreement could be reached. It became apparent as the day wore on that even on the issue of brain death there remain areas of disagreement.

Although most speakers agreed that a set of criteria for determining whether death has occurred is distinct from, and yet dependent upon, a definition of death, there was no attempt to define death precisely for medical purposes. The focus of discussion was rather on the criteria used to determine death. All agreed that any such criteria should ideally be neither over-inclusive nor under-inclusive; that is, application of the criteria to a group of patients should identify as brain-dead only those patients who would inevitably fail to survive more than a few weeks even with optimal medical treatment and it should identify as many of those patients as possible.

The Harvard Committee's criteria for brain death were: 1) a total lack of responsiveness to both internal and external stimuli; 2) absence of all spontaneous movement and respiration; 3) absence of all reflex activity; and 4) a flat, or isoelectric, electroencephalogram. All of these criteria had to be met at two different times, at least 24 hours apart.

Experience with the Harvard criteria has shown that they are clearly not overinclusive, as no patient who has met all of the criteria is known to have survived. Several speakers expressed the view that they are underinclusive, and questioned the need to retain one or more of the following requirements of the Harvard criteria: the absence of spinal cord reflexes, the requirement that the pupils be dilated, and the requirement of a flat EEG. Some suggested that the 24 hour interval between the first and second set of observations was unnecessarily long.

A set of criteria developed in Minnesota[2] and applied retrospectively to a group of 503 patients in what is known as the "Collaborative Study"[3] also met the standard that no patient who satisfied all of the criteria should survive. The Minnesota criteria included; 1) cerebral unresponsivity and absence of spontaneous movement; 2) absence of spontaneous respiration when the patient was removed from the mechanical respirator for up to four minutes; and 3) absence of brain stem reflexes. These criteria had to be met at two different times, at least twelve hours apart. It is interesting to note that of the 141 patients who fulfilled the Minnesota criteria, and eventually died, eleven had shown some EEG activity.

---

SHEILA TAUB, J.D., Associate Professor of Law at the University of Bridgeport School of Law, Bridgeport, Ct.

Not all agreed that the flat EEG should be eliminated, however. Some felt it provided useful objective documentation of the finding of brain death, provided that other possible causes of a flat EEG, such as drug overdosage, were ruled out. Angiography was suggested as a substitute, but its relative complexity, compared to the EEG, was recognized.

There was disagreement among the speakers as to whether the official time of death should be the time of the first or the second set of observations.

Most speakers took the position that brain death should be defined as death of the entire brain, including the brain stem, rather than death of the cortex alone. Dr. William Sweet, Professor Emeritus at the Harvard Medical School and one of the original members of the Harvard Committee on Brain Death, appeared to be alone in espousing the more radical view that cortical death should suffice. He stated: "It certainly seems to a number of us that an individual whose cerebral hemispheres are dead is no more worthy of another erg of effort or a farthing of money than a person whose brain stem is dead." He admitted that the practical problems of diagnosing death of the cerebral hemispheres might be greater, but suggested that this might be done by measuring the uptake of labeled glucose molecules in the cells of the cortex.

Those who favored the whole-brain definition of brain death stated that this would provide a built-in safety factor, since the brain stem is generally more resistant to destruction of function than the cortex. They also believed that such a definition of brain death would be more readily accepted by both the public and the medical profession at the present time. This concept of brain death is also the one that has been endorsed by the President's Commission on Biomedical Ethics, according to Dr. Joann Lynn, Associate Director of the Commission.

Many of the brain-death statutes now in force in 27 states refer to "irreversible cessation of spontaneous brain function," without specifying whether total brain function is meant. The statutes generally leave the question of what criteria are to be used to determine whether brain function has been lost to physicians, who are to apply "ordinary" or "accepted" standards of medical practice. A Uniform Brain Death Act, proposed by the National Conference of Commissioners on Uniform State Laws, with the approval of representatives of the American Medical Association and the American Bar Association, reads as follows: "An individual who has sustained either 1) irreversible cessation of circulatory and respiratory function or 2) irreversible cessation of all functions of the entire brain including the brain stem is dead. The determination of death must be made in accordance with accepted medical standards." All the speakers who addressed the issue agreed that brain death statutes should not attempt to define the criteria to be applied, but should leave that to the medical profession, because of the time lag involved in enacting legislation which recognizes advances in medicine and technology.

The brain-death statutes now in force in 27 states differ slightly in their provisions. Adoption of a Uniform statute by all states would eliminate the admittedly remote possibility that a person declared dead in Kansas, for example, could not legally be declared dead in California. Agreement on a Uniform statute may encourage those states which have not yet enacted brain-death legislation (of which Connecticut is one) to do so. On July 9, 1981, the President's Commission on Biomedical Ethics recommended that all 50 states adopt the uniform act, in a letter prepared for President Reagan and the leaders of the United States Senate and House of Representatives.[4]

The Bacchiochi case, discussed in the April and May issues of this journal, demonstrates the desirability of brain-death legislation. Bacchiochi's physician was reluctant to remove her from a respirator without a court order or a guarantee of immunity from prosecution, although she was clearly brain-dead and her family wished her to be removed from the respirator. This was so despite the fact that Connecticut, in common with all the other states, has a Uniform Anatomical Gift Act which permits the removal of vital organs for transplantation purposes if a patient is declared brain-dead. Unfortunately, the Connecticut legislature has adjourned without enacting a proposed bill that would have included acceptance of the concept of brain death.

Several speakers decried "physician timidity," such as seems to have been displayed in the Bacchiochi case. Such timidity may be understandable in the light of the continuing increase in medical malpractice litigation. It might be more appropriate to attack the timidity of legislators who fail to enact a law that would remove the fear of civil and criminal liability for physicians who act in accordance with currently accepted standards.

Opposition to brain-death legislation often comes from various "pro-life" groups who fear that it might be the first step down the "slippery slope" towards euthanasia, first of the hopelessly ill, and eventually of those members of society deemed unworthy of protection, such as the aged and infirm, or the retarded. Dr. Lynn stressed that there is a clear demarcation between recognizing the concept of brain death and advocating euthanasia, or even non-treatment, of certain categories of patients who are not in fact brain-dead. Patients who meet any of the accepted criteria of brain death are destined to lose all bodily functions within a matter of weeks, regardless of the care provided to them. The advantages of declaring the patient dead when brain-death is observed, rather than waiting for the cessation of respiration and circulation to occur, are that: 1) the patient's organs become available for transplantation while they are still in the optimum condition; 2) the patient's relatives are spared the emotional and financial burdens of treating the patient as if he/she were still alive for several additional weeks, when death is inevitable; and 3) society is spared the use of scarce and expensive resources which can more profitably used on other patients.

The Catholic and Protestant clergymen who spoke at the conference seemed to be wholly in favor of the concept of brain death. Some opposition was voiced by the rabbi on the panel, who stated that the traditional Jewish view of death, like the common law definition, involved the cessation of respiration and circulation. He quoted other Jewish authorities who have suggested that a brain-death statute should include an exemption based on religious grounds. This idea was vigorously opposed by several physicians, who stated that any definition of death must be applicable to all persons for all purposes.

Since the Connecticut legislature has failed to act on this issue in its just-concluded session, physicians and lawyers in this state might consider emulating the action taken by their brethren in Los Angeles recently.[5] Although California is one of the states which have brain-death statutes, the Los Angeles County Medical and Bar Associations jointly established guidelines for determining when life supports may be discontinued for terminally ill patients without seeking a court order. The guidelines permit discontinuance of the use of respirators and ventilators: 1) where the patient is brain-dead; 2) where the patient has signed a so-called "living will," which directs physicians not to use heroic measures to prolong their lives under certain circumstances; and 3) where the patient has been diagnosed as being in irreversible coma, where he/she has not expressed a desire that life supports be maintained in such circumstances, and where the patient's family concurs in the discontinuance of life supports. The first two provisions would seem to be superfluous, since they are already covered by statute in California. The legal effect to be given to the third remains to be seen. It provides some reassurance to the timid physician since it helps to establish the nature of accepted medical standards. The concurrence of the patient's family would appear to render litigation unlikely, however.

## REFERENCES

1. Ad Hoc Committee of the Harvard Medical School: A Definition of Irreversible Coma. The Journal of the American Medical Association 205:339, 1968
2. Cranford R: Brain Death, Concept and Criteria. Parts I and II. Minnesota Medicine 61:561, 600, 1968
3. An Appraisal of the Criteria of Cerebral Death: A Summary Statement, A Collaborative Study. The Journal of the American Medical Association 237:982, 1977
4. Reinhold, Robert: US Panel Proposes Uniform Law Finding Death in Brain Cessation. The New York Times July 10,1981, Al
5. Los Angeles MD's, Lawyers Agree on Rules for Halting Life Support. American Medical News April 17, 1981, 11

Advest

**Connecticut's Leading Investment Firm**

**Hartford**
Six Central Row
Hartford, CT 06103
(203) 241-2000

37 Lewis Street
Hartford, CT 06103
(203) 522-5201

**Guilford**
1110 Boston Post Road
Guilford, CT 06437
(203) 457-1550

**Middletown**
50 Riverview Center
Middletown, CT 06457
(203) 347-4491

**New Britain**
30 Bank Street
New Britain, CT 06051
(203) 225-6371

**New Haven**
195 Church Street
New Haven, CT 06510
(203) 777-7356

**New London**
One Union Plaza
New London, CT 06320
(203) 443-2821

**Old Saybrook**
263 Main Street
Old Saybrook, CT 06475
(203) 388-1223

**39 offices throughout the Northeast.**

**When you invest**

**Advest**

Headquarters: Six Central Row, Hartford, CT 06103
(203) 525-1421 or Toll Free (800) 842-3807

Members of major securities exchanges.

# How Colonial People make Tax-Free*... Care Free.

Randy Clegg

Inflation, recession, taxes, money-management. You shouldn't have to spend your time worrying about money. That's why Colonial Bank's Municipal Bond Department is your ideal solution. Our Municipal Bond Department is ready to assist you in discussing the advantages of tax-free* municipal bonds.

Colonial's Municipal Bond Department is uniquely suited to offer you the same sophisticated services as major investment managers. Use of our Safekeeping service allows the tax-free* interest on your municipal bonds to be immediately deposited to a Colonial Interest Earning account.

The following services are directed toward achieving *your* personal investment strategy. All without charge or obligation. All under one roof.

•

Expert Investment Counseling by Municipal Securities Specialists.

•

Direct wires to brokers and financial news services.

•

Daily analysis of the economy and market trends.

•

Confidential Evaluations of *your* individual investment needs.

For free evaluation of your current investments, or for information on how tax-free* municipal bonds may prove beneficial to you, call Randy or Nancy at 574-7049 or 1-800-992-3229.

Nancy Pierpc

**Colonial Bank**

We make things happen in Connecticut. For everyone.

*Interest exempt from all present Federal Income Tax.

Member FD

# Current Medicolegal Issues

## THE CITATION

### Physician Assessed Tax Penalties and Income Tax Deficiencies

The IRS properly assessed a physician and his wife more than $75,000 in income tax deficiencies and tax penalties, a federal appellate court ruled.

The physician, who specialized in radiology, created an inter vivos trust for a 25-year period. The physician, his wife and son were trustees. The trust was established to accept real and personal property including "exclusive use of his or her lifetime services and . . . earned remuneration accruing therefrom" so as to maximize the physician's lifetime efforts.

Shortly after creating the trust, the physician conveyed to it certain real estate, personal property, investment interests, insurance policies and all of his earned income. The income received by the trust was used for family expenses, such as housing, health care, educational expenses, food, clothing and vacations. It also contributed over $30,000 to an educational trust set up by the physician and his wife. The educational trust, which was denied tax-exempt status by the IRS, contributed $8,000 to a local church.

The IRS reviewed the physician's tax returns for the years 1972-74 and notified the physician that he had substantial unreported income for the years in question. It assessed tax deficiencies and a five per cent negligence penalty. The physician then filed suit challenging the IRS determinations. The Tax Court upheld the IRS findings.

Affirming the decision on appeal, the appellate court said that the physician could not avoid taxes on the income that he earned. The physician retained full direction and control over the earning of the compensation. The trust had no right to supervise his employment or determine his remuneration and the physician had no legal duty to earn money or perform services for the trust.

Further, since he retained powers over the trust that could be exercised without the approval or consent of an adverse party, he was taxable on the income of the trust, the court said. There was strong support for assessment of the five per cent penalty, the court added.—*Vnuk v. Commissioner of Internal Revenue,* 621 F.2d 1318 (C.A.8, July 11, 1980)

### Maine Court Decides Informed Consent Case

A physician's duty to disclose is measured by what a reasonable medical practitioner would disclose under similar circumstances, the highest court of Maine ruled.

A patient with a history of back problems consulted an orthopedic surgeon for renewed back pain. He diagnosed a ruptured disc at the L4, L5 interspace. Conservative treatment failed and he performed a myelogram. On the basis of the myelogram, he recommended surgery. In February 1976, the surgeon performed a laminectomy and foraminectomy at what he thought was the L4, L5 interspace. It appeared at trial that because of the patient's transitional vertebrae, which made counting vertebral levels difficult, the surgeon in fact performed the procedures at L3, L4.

During the operation the surgeon inadvertently tore the dura, arachnoid and pia while removing a small bone attached to epidural scar tissue. As a result spinal fluid leaked from the patient's spinal cord. After surgery, her low back and radiating leg pain intensified. She then consulted another physician, who removed protruding disc material at the L4, L5 interspace in July 1976. Although this surgical treatment alleviated her radiating leg pain, her back pain continued and intensified because she began to suffer from chronic adhesive arachnoiditis.

In a complaint filed on November 8, 1977, the patient alleged that the physician who performed the February 1976 surgery was negligent and had failed to inform her of the risks of surgery. A jury returned a verdict in favor of the orthopedic surgeon, and the patient appealed.

Reversing the decision, the high court said that the trial judge committed reversible error in his questioning of prospective jurors. The judge excused certain prospective jurors because they or their close relatives were

---

*THE CITATION is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.*

patients of the physician. However, they were not permitted to leave the courtroom; instead, they answered further questions about medical care they or their relatives had received. Their answers left the impression among the other prospective jurors that they were satisfied with the medical care given them or their relatives by the physician. The trial judge then denied a motion for a mistrial, but he ordered the previously excused jurors to leave the courtroom.

The court also stated that the scope of the physician's duty to disclose was measured by the disclosure that a reasonable medical practitioner under similar circumstances would make, not by the extent of the patient's need for information.

The appellate court said that the mistrial should have been granted and that the patient was entitled to a new trial.—*Woolley v. Henderson,* 418 A.2d 1123 (Me. Sup. Jud. Ct., Aug. 28, 1980)

## MD Fails To Prove Libel In Suit Against Hospital

A physician failed to state a cause of action against a hospital for injunctive relief and damages for libel, an Illinois appellate court ruled.

The physician had been chief of the medical staff of the hospital from January 1974 to September 1974, when the board of directors convened a special meeting at which charges were made against him and it was proposed that his medical staff privileges be reduced, suspended or terminated. The board offered the physician a hearing, which was completed on February 18, 1975, after 25 sessions.

The board removed the physician from his post as chief of staff for one year, suspended his privileges for three months, and placed him on probation for an additional three months. The physician alleged failure to follow its bylaws and libel. A trial court dismissed the suit for failure to state a cause of action.

Affirming the decision, the appellate court said that the physician failed to furnish a copy of the bylaws that the hospital allegedly did not follow. The allegedly libelous report was conditionally privileged and could not be the basis for a libel claim, the court said. It was prepared by two physicians who were directed to report on the quality of health care rendered by four physicians, including the chief of staff.

The report charged him with failure to see patients often enough; failure to write appropriate progress notes; failure to obtain appropriate and timely medical consultations; failure to use advice given by consultants; failure to cooperate with the Utilization Review Committee; improper and excessive prescription of narcotics, steroids and antibiotics; improper medical treatment of patients; and following improper surgical procedures. The report was read only by the board of directors and did not constitute libel, the court concluded.—*Spencer v. Community Hospital of Evanston,* 408 N.E.2d 981 (Ill. App. Ct., July 21, 1980; rehearing denied, Aug. 26, 1980)

## Physicians And Hospital Not Negligent In Care Of Breast Cancer Patient

In a malpractice action, a patient was not prejudiced by a trial court's refusal to instruct the jury on increased risk, a Pennsylvania appellate court ruled.

The patient was referred by her physician to a surgical association that specialized in diagnosis and treatment of breast cancer. Tissue removed from her breast did not reveal cancer.

A breast mass found a few months later was not examined. When the patient became concerned, more than a year later, about increase in size of the mass and pain, a member of the association performed a biopsy. Cancer was found, and a mastectomy was performed. Since the cancer had spread to a lymph node, the patient had to undergo chemotherapy and other treatment.

The patient sued her physician, the surgical association, and the hospital where the procedures were performed. She contended that as a result of negligent failure to remove the masses in her breast and failure to perform postoperative tests she had contracted cancer, which had shortened her life, impaired her health, and caused financial loss. The trial court directed a verdict for the hospital, and the jury decided in favor of the other parties.

On appeal, the patient contended that the trial court erred in denying her request for a jury instruction that a person who undertook to render services for another was liable for physical harm resulting from the failure to exercise reasonable care if such failure increased the risk of harm.

The court said that if the patient had based her case on the theory that when she went to the physicians she already had cancer and that their negligence in not removing the cancer substantially increased the risk that her breast would have to be removed it would have been error not to have given the requested instructions. However, since the case was not tried on this theory, the court found that it was not error to refuse the request.

The court said that counsel had not indicated any part of the record showing that the issue of increased risk was developed and argued to the jury or that the jury had reason to develop the issue from the evidence presented. Finding that the patient was not prejudiced by the court's refusal to give the instruction, the court denied the request for a new trial.—*Jones v. Montefiore Hospital,* 418 A.2d 1361 (Pa. Super. Ct., Feb. 13, 1980)

—THE CITATION, Vol. 42, No. 8/February 1, 1981

# Month in Washington

After a frantic burst of activity, Congress has settled the budget reconciliation bill, voted on tax cuts, and departed for a month-long vacation with much of the legislative work for the session behind it.

Medicaid will not be cut as deeply as the Administration wished and the block grant proposal was softened considerably under the budget compromise agreed to by the House-Senate conferees.

The Administration was delighted with the overall budget reconciliation compromise that pared spending next fiscal year by $37 billion, but the Administration was forced to retreat on the two key health items—Medicaid and block grants—that had threatened to stall the huge conference negotiations on the House and Senate budget bills.

The flat, five percent cap that the Administration wanted to impose on increased federal outlays for Medicaid next year was thrown out. The Senate had voted a nine percent cap, but the House had approved a formula decreasing federal payments over the next three years by three percent, two percent and one percent.

The conference compromise reduced projected costs by three percent, four percent the following fiscal year, and 4.5 percent the next year. Savings are estimated to be about $1 billion a year, about what the Administration sought.

A controversial Senate plan to drop the minimum federal contribution to states to 40 percent from the present 50 percent was a casualty of the conference. A dozen larger states would have been especially hard hit.

State fears about the impact of the Administration's Medicaid cap were a major reason House Republicans decided not to fight earlier on the House floor for a health budget package following the Administration's recommendations. Instead, more liberal health provisions backed by the House Democratic leadership were adopted without resistance in order to assure House passage of the rest of the Republican budget substitute that was a triumph for the Administration.

Sen. Orrin Hatch (R-Ut), Chairman of the Senate Labor and Human Resources Committee, made a determined fight to hold the line on the Administration's plan to put 26 categorical health programs into block grants to the states.

With his back against the wall the House conferees not budging, Hatch finally took the unusual step of asking the White House to endorse any concessions he might have to make. The clearance was granted and the impasse over block grants was broken.

The Administration had proposed to break the 26 programs that cost some $4 billion a year into two block grants, giving the states a free latitude to spend their allotments within the blocks.

The compromise calls for three block grants and for continued attachment of certain federal strings on all programs involved. The three blocks cover preventive health, health services and primary care.

The controversial family planning program would remain as a categorical program for three years during which time Health and Human Services (HHS) Secretary Richard Schweiker would make a study of the program.

The preventive health block grant would include home health programs, rodent control, fluoridation, health education, hypertension, emergency medical services, rape crisis centers and health incentive programs.

The health services block combines mental health, and alcohol and drug abuse prevention.

The primary care block grant primarily covers community health centers.

Programs excluded from block grants include, in addition to family planning, venereal disease control, child immunization, tuberculosis control and migrant health programs.

However, two of the three block grants that emerged from conference were so limited as to be little more than categorical. Under the Health Services block grant, for example, states next year must allocate funds next fiscal year among mental health, alcohol and drug abuse programs as they have in the past. They can shift funds about by five percent the following year and 15 percent the next.

The three-year authorizations for the block grants were:

— Preventive Health—$92 million, $93 million and $95.5 million with an added $3 million annually for rape crisis centers.
— Health Services—$491 million plus $30 million for alcoholism, $511 million, $532 million.
— Primary Care—$280 million, $302 million, and $327 million.

Under the agreement, the health planning program grants were allowed to continue but with cuts. States were allowed to reduce the number of Health Systems Agencies.

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

The Administration would be allowed to eliminate as many as 30 percent of the 187 Professional Standards Review Organization (PSRO) programs. The House bill would have permitted the President to kill the program within a few years.

Authority was given in the budget bill to phase out the Public Health Service Hospitals starting next fiscal year.

Programs reauthorized included Health Maintenance Organizations (HMOs), Health Statistics Center, Health Services Research Center, Health Care Technology Center and the National Library of Medicine.

The budget bill cleared the way for C. Everett Koop, M.D., to become Surgeon General by removing the age limit for the job and the requirement that the nominee have experience within the PHS.

The existing adolescent pregnancy program was continued with a new $10 million Senate program added for research for sexual chastity and more than $6 million for storefront and other operations to counsel on prevention of promiscuity, etc.

No major changes were made in Medicare, but a House provision was adopted to increase by $28 the amount patients must pay hospitals before the program picks up the expense. Rejected was a House proposal to require Medicare patients to pay $1 a day for each of the first 60 days of hospitalization.

*****

The real loser is the public when the Federal Trade Commission (FTC) forces the professions to abandon responsible self-regulation, the American Medical Association has told Congress.

Urging Congress to legislate the FTC out of the business of regulating professions, Lowell Steen, M.D., a member of the AMA Board of Trustees, said "many associations have halted socially desirable activities such as peer review of excessive fees for fear of becoming involved in protracted and financially debillitating administrative procedures."

The FTC has for six years pursued action against the AMA, the Connecticut State Medical Society, and the New Haven County Medical Association challenging ethical principles of the medical profession "in a way that we view as harmful to the welfare of patients," said Dr. Steen in testimony before the Consumer Subcommittee of the Senate Commerce Committee.

"We and other medical societies have had to divert scarce resources from socially beneficial activities to defend against unfounded FTC charges," the AMA official said.

Congress was asked to approve legislation that would strip the FTC of jurisdiction over the state-regulated professions; preclude pre-emption of state laws by the FTC; provide financial relief from excessive demands of the agency for information; circumscribe the subpoena power of the FTC; clarify the meaning of "unfair competition"; provide protections afforded through judicial proceedings; and repeal the "intervenor program" under which the FTC funds organizations pressing causes before the FTC.

Dr. Steen pointed out that Reps. Thomas Luken (D-OH) and Gary Lee (R-NY) have introduced legislation to place a moratorium on FTC actions involving state-regulated professions, as effort supported by the AMA.

One of the AMA's main concerns is the "basic unfairness one finds when involved in an FTC action, where the Commission acts as an inquisitor, prosecutor, judge and jury," said Dr. Steen. The FTC action against the AMA's ethical precepts on advertising and solicitation came without warning and without prior investigation, he noted. There was "continuing disdain for responsible professional self-regulation and for the interests of the patients," Dr. Steen said. Failure to restrict misleading promotions can result in terrible tragedy to people, but the response of the FTC to the evidence produced by the AMA "was astonishing." The agency held that the AMA's stance against physician testimonials is unacceptably overbroad and entered a sweeping order prohibiting the Association from involving itself in any way in the advertising practices of physicians unless those practices would violate the FTC act.

There are no compelling reasons whatsoever to give the FTC jurisdiction over the professions, the physician said. The FTC has no special insight and to the contrary, "has demonstrated a distinct lack of understanding in this area." State regulation is well suited to dealing with unfair methods of competition and private and state actions may be taken under the federal antitrust laws.

The AMA challenge to the FTC's action on the advertising code has been accepted for review by the Supreme Court which is expected to hand down a decision in the case within a year.

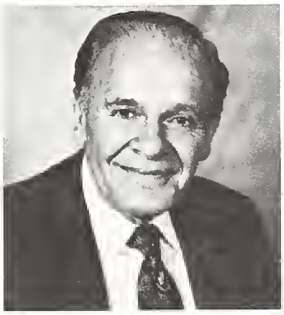
The American Dental Association (ADA) told Congress that the Federal Trade Commission wrongfully assumes that "its intervention into the regulation of oral health care delivery in the United States can confer an economic benefit to patients without an accompanying health risk and an adverse effect on quality of care."

ADA President Robert Griffiths, D.D.S. backed legislation that would strip the agency of authority over the professions. Dentists provide a service and not a product; the FTC should have no role in the regulation of dentists, Griffiths told the Senate Commerce Consumer Subcommittee.

Alvin Levin, past President of the American Optometric Association, said his association believes that "not only does the FTC lack the authority to preempt state health care laws, but it should not be given such authority in the future, as a matter of sound public policy."

# The President's Page

## United We Stand—Etc.



The call for unity among physicians should certainly ring out clearly and loudly if we are at all conscious of the world we live in. No longer are we living in an era of laissez faire attitudes regarding our role in the economy and life of our country. To the contrary, never has so much been publicized about our triumphs, our mistakes, our greed, our generosity, our wants. Our citizens are preoccupied by health issues. Despite our excellent intentions we are not always perceived as friends in court.

Today, therefore, more than ever, we should create a unity of all those great forces in medicine to articulate our greater purpose in society: alleviation of pain and suffering, friend and counselor to the ill and maimed, adviser on health and environmental issues, guardian to the underprivileged and abandoned in medical need.

In the unity of all our diverse constituencies—the students, resident, academicians, researcher, private practitioners—we can become more effective in solving the medical problems of our nation. In that same unity lies the strength (and, of course, the resources) to combat attempts to intrude on our high ethical standards by government agencies (FTC) or other para-medical groups anxious to legislate the right to practice medicine without proper training. In that unity we find the ability to interact with society in general in meeting our national health goals.

Unity means organization. The AMA is the organization which today answers most of the needs we see as physicians: It is democratic, it responds quickly to the political environment, it does an excellent job of portraying our collective feelings before congress and the various agencies of government. The AMA is you and I—it is not some sinister force without controls. Although I resisted joining it myself for years because I considered it reactionary and negative, I realize now that by working together each of us can make an impact on attitude and performance. The AMA stays finely tuned to our society and as the most democratic organization I've ever seen does represent American medicine well (even though I may occasionally disagree with specific votes).

I consider most doctors responsible individuals and concerned individuals. If you are not now a member of the AMA I think you owe it to yourself and your colleagues to join. Make the organization stronger. Add your voice to the deliberations. Pay your fair share for the work done for all of us. Remember, united we stand, divided, etc.—

Andrew J. Canzonetti, M.D.
*President*

# "Your suit is ready, doctor," said the tailor.

Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

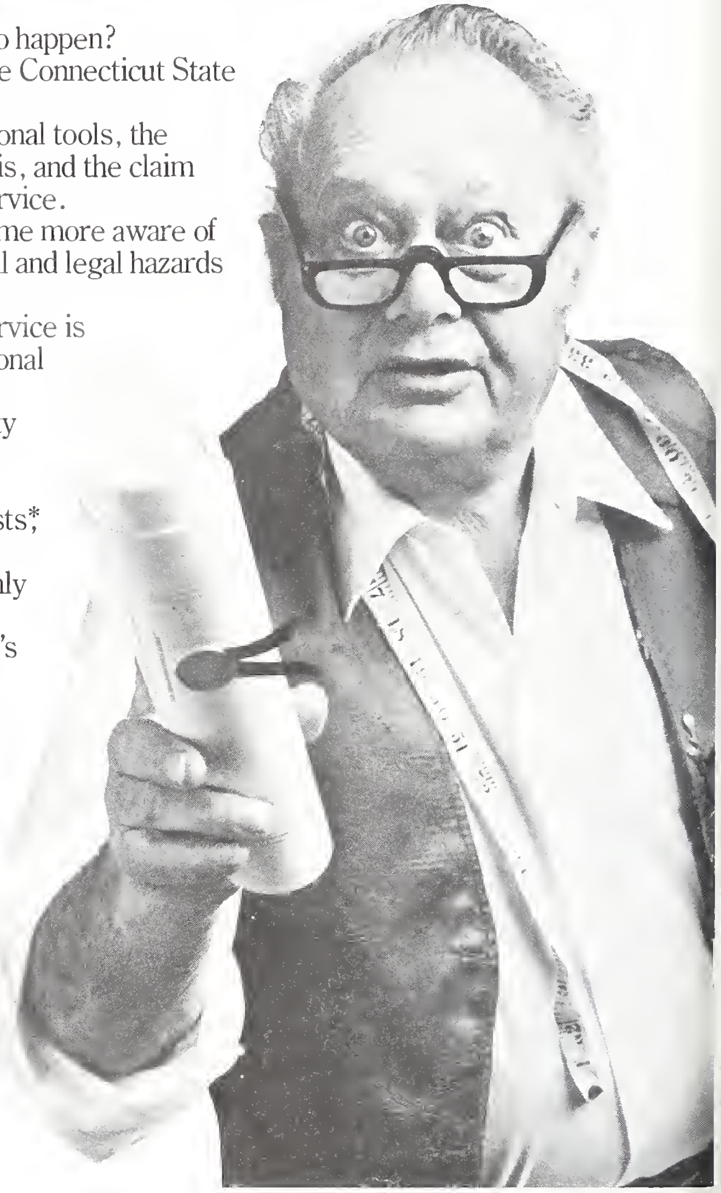
Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs,* 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.



Ætna

LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company

# Reflections from the Dean's Office

## Thumbs Up, Thumbs Down

ROBERT U. MASSEY, M.D.

Applications for the medical school class of '86 have started to arrive, and admissions committees will shortly begin their task of choosing those men and women who will serve medicine from 1990 until they retire in the '20's and '30's of the next century.

Medical College Admission Test scores, grade point averages, extracurricular activities, letters of recommendation, and the interviews—which are the best predictors and how should they be used to pick our next generation of physicians? An A in organic chemistry may be the best assurance of academic success in the basic sciences. Our experience has suggested that the interview, viewed retrospectively, predicts outstanding success or failure in the clinical years; that may run counter to the experience of others.

Admissions committee members could, I suppose, make up a description of the ideal medical student and agree upon most of the desirable qualities, but I suspect the final picture would be a hodge-podge, with contradictory traits that could not possibly exist together in the same person. The committee would doubtlessly fall again into confusion if asked to consider whether ideal medical students and ideal doctors possess the same qualities of heart and mind.

The old instruments have lost their sharp edges. Grades are inflated in most colleges, although this is often denied; because there are no grades higher than A, the good and the best are indistinguishable. Students may for a price prepare themselves for the MCAT, and cynics say that whether students are prepared or not, all that is measured is their skill in taking computer-scored examinations. Every college wants a high number of its students who apply to professional schools to gain admittance. As competition for students becomes keener, this want will become more insistent. Letters of recommendation are useful only if the code words are known.

Even if we could know more, would we know what we wanted? Intelligence, certainly, but what kind? Should it be the intelligence of a Mozart, an Einstein, or a Schweitzer? Osler discounted his own intellectual endowment and said that whatever success he had achieved had been owing to hard work. We should like to know of our applicants how they have lived and what they have thought. We don't speak much of constitutional types anymore, lacking the data, but we secretly believe that there are types of people—types of faces, types of bodies, types of voices—some of which we favor over others. That belief may urge us on to confess that some characteristics tell us more than what ought reasonably to inhere in them. There are some types we intuitively trust more than others, and some we would positively distrust. As scientists and egalitarians we worry about these notions; we suspect that they are unscientific and we are ashamed of their illiberality.

Novelists do not have these scruples. They know about constitutional differences; that is why they take such pains to describe people, how far apart their eyes are and how weak their chins, or how soft and flabby their hands. In fact, they may still use the old humoral terms which served medicine from the time of Hippocrates until a century ago: phlegmatic, sanguine, melancholic, choleric. We have added others to these of the ancient humoralists: nervous, introverted, neurasthenic, passive-aggressive, schizoid, depressive. Exponents of the ancient four would see in these only variations on the theme. Shakespeare knew the system:

> "Let me have men about me that are fat;
> Sleek-headed men, and such as sleep o'nights.
> Yond Cassius has a lean and hungry look;
> He thinks too much: such men are dangerous."

Cassius was a melancholic, and therefore to be feared, so Caesar said; there was more loyalty in someone phlegmatic, more pleasure in someone sanguine.

It would be simpler if admissions committees could type their applicants; if somehow in the short space of an hour, they could make out the depth of moral commitment, the love of mankind, the intelligence, the sensitivity, the common sense, the physical stamina, and the ethical toughness of an aspirant to the priesthood of Aesculapius. Perhaps a Shakespeare, or a Dickens, or a George Eliot on the committee would help, but failing that, doctors will have to decide when doctors disagree, or else get help from fellow academicians in other disciplines, and from lawyers, clergymen, patients, legislators, and business people.

Unless we are prepared to allow one good humored person the omniscience needed to make these choices, next year's class will be picked by a committee whose members will not have lost all traces of the doctrine of the four humors, who will be looking beyond the MCAT scores for signs of acuity and hints of the cardinal virtues.

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# Have you considered participation?

- The Century Contract Comprehensive Schedule of Services has been increased *three times* in 18 months.
- These increases, in the aggregate, have amounted to 51.6%.
- We will continue to update the Century Contract schedule annually.
- Participating Providers receive prompt payments directly from Blue Cross & Blue Shield.
- Your participation can reduce receivables and eliminate some billing steps.
- Over one million Connecticut residents are Century Contract members for whom claims totaling $82.5 million were paid in 1980.
- Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

**Blue Cross**
**Blue Shield**
of Connecticut

THE HEALTH CARING PEOPLE

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Provider, call our office or complete the form below and send it to:

Blue Cross & Blue Shield of Connecticut
Professional Relations Department
370 Bassett Road
North Haven, CT 06473

Telephone: 1-800-922-1742 or 265-8203

Name ______________________ Telephone ______________

Address ______________________________________

City ______________ State __________ Zip ____________

CM781

# The Future of Comprehensive Health Planning

JOSEPH M. HEALEY, J.D.

Some commentators have viewed the decision by the United States Supreme Court in the *National Gerimedical Hospital and Gerontology Center v. Blue Cross of Kansas City*[1] case as the death knell of comprehensive health planning in the United States. In this decision, the Court refused to immunize from anti-trust laws, the refusal of Blue Cross of Kansas City to accept a new hospital as a participating provider under its health insurance plan because of the hospital's failure to obtain construction approval from the local health systems agency. On closer examination of the Court's opinion, however, it appears that these concerns are exaggerated. The holding of the Court seems to be tightly drawn and to be limited by the peculiar facts of the case.

The primary issue presented in the case was whether the Blue Cross refusal to deal was immunized from anti-trust scrutiny because it was intended to aid implementation of the plans of the Kansas City Health Systems Agency. The hospital claimed that the Blue Cross refusal violated the Sherman Anti-Trust Act. Blue Cross claimed that the National Health Planning and Resources Development Act had implicitly repealed the anti-trust laws as they applied to their conduct. The trial court (U.S. District Court for Western Missouri) found in favor of Blue Cross, reasoning that if private parties seeking to effectuate the planning objectives of an HSA could be subjected to anti-trust liability, then accomplishment of the goals of the National Health Planning and Resources Development Act would be frustrated. The trial court based its conclusion on its judgment that Congress intended that actions taken pursuant to the Act, within the scope of the Act would be exempt from application of the anti-trust laws. The United States Court of Appeals for the Eighth Circuit affirmed the trial court's decision. In reversing these decisions, the United States Supreme Court pointed out the unique circumstances of the case:

> "In the present case, we must apply these precedents to an industry with a regulatory structure quite different from those considered previously. The action challenged here was neither compelled nor approved by any governmental, regulatory body. Instead, it was a spontaneous response to the finding of an advisory planning body, the local HSA, that there was a surplus of acute-care hospital beds in the Kansas City area. Indeed, when respondents refused to enter into the agreement with petitioner, the *regulatory* aspects of the NHPRDA—controlled by the state health planning agencies—were not in place in Missouri. There simply was no regulation of this hospital construction, as Missouri had not established any state regulatory agency with authority to review hospital construction.[2]

In a subsequent footnote, the Court points out that if Missouri had established such a regulatory agency, the case probably never would have arisen.

Futhermore, the Supreme Court's decision does not represent a conclusion that the actions of Blue Cross were in violation of anti-trust law. It simply paves the way for a trial on the merits of the substantive questions in the case. The implications of the Court's decision are therefore, even further limited.

---

JOSEPH M. HEALEY, J.D., Associate Professor of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, CT.

## REFERENCES

1. National Gerimedical Hospital and Gerontology Center v. Blue Cross of Kansas City and Blue Cross Association, 49 LW 4672 (1981)
2. ibid., pp. 4675-6

*Symposium*

# Grand Rounds In Medicine:
# RECOGNITION AND MANAGEMENT OF THROMBOEMBOLIC DISORDERS

**Symposium Objectives**

The objective of this symposium is to provide clinically relevant information to aid the practicing physician in the recognition of patients with thromboembolic disorders and proper patient selection for the use of anticoagulant or antiplatelet therapy. Panel discussions will focus on actual case histories representative of management problems confronting the physician in private practice.

**Symposium Co-Chairmen**

**Richard Gorlin, MD**
Murray M. Rosenberg Professor
Chairman, Department of Medicine
Mount Sinai School of Medicine
Physician-in-Chief
The Mount Sinai Hospital
New York, New York

**Louis M. Aledort, MD**
Professor of Medicine
Vice Chairman, Department of Medicine
Mount Sinai School of Medicine
New York, New York

**Symposium Accreditation:**

As an organization accredited for continuing medical education, The Page and William Black Post-Graduate School of Medicine of the Mount Sinai School of Medicine (CUNY) certifies that this continuing medical education offering meets the criteria for ten (10) credit hours in Category I of the Physician's Recognition Award of the American Medical Association, provided it is used and completed as designed.

**Registration**

For additional information and registration, call Ms. Jayne Gross at 800-223-8978/9 outside of New York State or 212-752-4530 in New York State.

Endo Coumadin—JRL. Ad—SH2810

**Connecticut Medicine**
*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editorial Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
James D. Kenney, *New Haven*
Ramon N. Kranwinkel, *Danbury*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Stewart J. Petrie, *Derby*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*

# EDITORIALS

## Sports for the Handicapped

It's often said that the health of a nation can be measured by the moral fiber and physical activity of its people. If so, judging by the current popularity of sports in this country, we appear to be enjoying an upward trend in national health. We are, at least, active.

Perhaps we are strengthening our moral fiber too, if attaining justice for all our people may be said to be at the core of morality. Even in sports, we have widened opportunities for participation. Articles in this issue provide an example of this expansion. It's clear that the increasing numbers of Americans who participate in sports include handicapped—as well as healthy—people of all ages. No longer do the handicapped stay shut in at home—nor even remain passive observers on the sidelines.

These wider opportunities have been gained—at least in part—through advances in sports medicine. As physicians, we have abandoned an all-or-nothing attitude toward sports and, as a result, doors are opening for each of us—the world-class athlete, the weekend plodder, the handicapped sports enthusiast.

In this issue of *Connecticut Medicine,* three articles deal with sports participation by the handicapped. The subject is timely, since the United Nations has designated 1981 as the "International Year of the Disabled." It is also a subject of lasting value since it is often the primary care physician who carries the essential responsibility that opens—or closes—the doors to sports participation for the handicapped patient.

For a long time, physicians shut themselves out of the process of solving the problems of sports participation for the disabled athlete. Coaches and physical education teachers bewailed hard-line "Don't play" recommendations that physicians made to injured and handicapped athletes. The typical response to such an unsympathetic suggestion was to seek out a rubber-stamp doctor, an obviously unsatisfactory solution. In recent times, a more realistic attitude toward athletic possibilities and limitations has evolved by way of physicians' increasing interest in sports medicine and through government mandate. The combination—if not always comfortable—has proved a powerful catalyst that encourages communication among athletes, their teachers and coaches, their parents, and their physicians.

In several court suits, young athletes are petitioning for the right to participate in sports previously denied because of physical conditions considered by the American Academy of Pediatrics to be a contraindication for the particular type of sport. In many cases, the courts have ruled in favor of the handicapped athlete because there is more prejudice than statistically validated data to back up a "Don't play" attitude. Nevertheless, physicians still must be accountable for clear, no-nonsense recommendations when a patient's participation in sports might complicate an existing physical condition. A child with only one kidney may want to play soccer, for example. Should the physician flatly deny permission to play based on guidelines established by professional groups? Or, should the physician authorize play but recommend protective measures to minimize risk?

It would be difficult to present evidence that would support *unqualified* denial of sports participation. Yet, it makes sense for a child to avoid the inherent risks of contact sports when injury would have serious consequences. Perhaps we need to follow the trend of evaluating benefits and risks on an individual basis, considering the particular handicapped athlete participating in a particular sport. We need to take into account what is real and what is theoretical in our delineation of risks and benefits. Certainly, we need to think more about adapting the sports situation for the individual and less in terms of avoiding the whole

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

thorny issue by merely recommending no participation at all. It is the physician's responsibility to help patients understand risks, that's clear, but our parallel responsibility is to help patients live as fully as they can.

Meeting this challenge for individual patients is a satisfying process, problem solving being the essence of medicine. If we cannot cure the disability, we can search for the solutions that allow individuals to reach their own potential for achievement. Often, the achievements of the handicapped serve as a reminder that each of us has the potential to attain the unexpected. Dr. Robert E. Cooke has said, "The ceiling of our capacity is imposed only by our genetic endowment and that is probably orders of magnitude above our usual performance." Perhaps we physicians can better approach our own ceilings of capacity by using our skills and knowledge to open doors for our patients so they may participate fully in the expanding opportunities within our society.

Thomas G. Flynn, M.D.

Guest Editor of special articles on "Sports for the Handicapped" published in this issue of *Connecticut Medicine.*

This symposium was held at the Yale University School of Medicine and was funded in part by a grant from Schering Corp.

*Associate Clinical Professor*
*Yale University School of Medicine*
*Member, Committee on Pediatric Aspects of Physical Fitness, Recreation, and Sports of the American Academy of Pediatrics*

# Those "Newer" Sexually Transmitted Diseases

Much attention has been directed in the last few years to the "newer" sexually transmitted diseases, such as those caused by chlamydia trachomatis, mycoplasma, cytomegalovirus and others. As infections, they are, of course, as old as syphilis and gonorrhea. However, their incidence and our knowledge of their prevalence have greatly increased. Gonorrhea and syphilis have old familiar faces. The other infections are more difficult to diagnose and treat, and have, therefore, every chance to fluorish and spread, given our prevailing sexual mores.

In diagnosing these infections, two markedly different standards exist: those in research facilities in this field; and those applying to practitioners. It is the practitioners who see most of the cases. In searching for the etiological agent in non-gonococcal genital infections, the gulf between specialized clinics and private practitioners is widening due to the difficulties involved in performing the tests and because of the cost factor. This is not made clear in the literature; scientific articles on this topic give the impression that physicians in their practice should be able to correctly diagnose a variety of these sexually transmitted diseases. In the real world, this is not possible.

While chlamydial infections are often suspected, most laboratories cannot confirm the diagnosis. Though many tests exist, they are of limited practical use, being either unreliable as in the case of fluorescent antibody and serological tests—or too time consuming and too expensive to be applied routinely. This refers to cultures, which cost about twenty times as much as gonorrhea cultures. At present, the only indicative test is by culture method: growth on McCoy cells. It requires virological technology and few laboratories provide this procedure. Practically speaking, the physician has to do without it.

Epidemiological studies have shown that genital infections and complications due to chlamydiae trachomatis are far more common than those caused by the gonococcus. Chlamydial infections produce symptoms resembling those due to gonorrhea. If a patient visits a physician's office with related symptoms, such as those of urethritis in the male or salpingitis, it is not advisable to await results before treating—even if culture tests for chlamydiae are available. Lab tests, at this stage, are more an epidemiological research tool than a viable aid in day-to-day practice.

There are other agents that can produce non-gonococcal urethritis in the susceptible male, and damage in the tubes if they ascend beyond the cervix. Among them are mycoplasma hominis and ureaplasma urealyticum. In some animal species the mycoplasmas produce transmissible diseases of the genital tract and infertility. In human pathology, the debate is still on as to the role played by these organisms in creating conception difficulties.

All the exhortations to search for pathogens other than the gonococcus and the spirochaete of syphilis can be confusing and disconcerting to the practitioner who has no access to sophisticated microbiological techniques.

The state of the art at this time makes it necessary for practitioners to treat genital infections with gonorrhea-like symptoms *promptly, empirically,* and *aggressively* with broad-spectrum antibiotics. The first line of drugs are the tetracyclines. The various penicillins cover a much narrower spectrum. If pathogens other than the gonococcus are suspected, the length of treatment should be at least a week. Gonococcal infections respond to shorter treatment courses with tetracyclines.

If the symptoms suggest involvement of the gonococcus and lab tests for gonorrhea are done, the practitioner should be aware of their limitations. If test results for gonorrhea are negative, a pelvic inflammatory disease may still be gonococcal; it may be due to chlamydiae, to other specific agents, or it may be polymicrobial. A positive test for gonorrhea from the cervix or the male urethra does not exclude the presence of the other pathogens.

Things become even more complex when it comes to diagnosing cytomegalovirus. But then, it matters little since a treatment is not available either.

In summary, lab techniques cannot be applied in the routine diagnosis of the newer sexually transmitted diseases until such time as reliable and much cheaper methods become generally available.

Hans H. Neumann, M.D.

*Medical Director*
*New Haven Health Department*

## Donation of Bodies or Organs for Transplantation and Medical Science

Upon death the human body is a veritable storehouse of human tissue valuable to those still living.

The deceased body can be of great service as a source of organs and tissues for transplantation, for medical education and for research.

The American Medical Association points out that transplantation of tissues of one person to another has been attempted since earliest history. The problems of tissue preservation, wound infection, operative technique, and the rejection of the grafted tissue by the host doomed most early attempts. With the advances of 20th century science many of these difficulties have been overcome and transplantation has become a practical reality for many individuals.

About 25 kinds of tissues and organs from persons both living and dead are being used with increasing frequency for transplantation, the AMA says.

Today, an important factor limiting transplantation is the lack of enough suitable organs and tissues from human donors.

Transplantation has become so well accepted that an anatomical gift act is now the law in every state. These laws make it possible for an individual's wishes to be respected regarding the disposition of part or all of his body immediately following his death. Human tissue and organs are too valuable to be allowed to decay if their use can give life and health to others.

Prospective donors should remember, however, that organs and/or bodies are accepted on a need basis. No medical facility is obliged to accept an offered gift. The age and condition of the donor and the availability of specialized staff and facilities at the time and place of death may prevent acceptance of a generously offered gift.

### Kidney Transplants

Transplantation of whole organs from one person to another was first accomplished in 1954 when a kidney was transplanted. Such operations are no longer experimental and kidney transplants are now the most frequently performed organ transplants, with a high rate of success.

More than 2,000 kidney transplants are performed annually in the United States and 10-20,000 kidneys may eventually be needed each year.

The first eye bank in the U.S. was founded in 1944 and transplantations of corneas (the clear portion of the front of the eye) are well established. Cornea transplants restore sight to many persons whose vision has been severly damaged or destroyed by injury or disease. Other parts of the eye frequently used for transplantations include the sclera and vitreous. Restoration of sight is a significant event second only to life itself to most people.

Many of the structual tissues in the body, including bone, tendons, heart valves, fascia (the fibrous tissue that covers musles), dura (the membrane covering the brain), and cartilage have been transplanted with great success for more than 20 years. These tissues do not have to be living to provide a valuable lattice work on which the individual can regrow and replace damaged or lost tissue. Unlike living organs, these tissues can be stored for indefinite periods in tissue banks and thereby provide a ready supply for the surgeon faced with reparative surgery.

### Heart and Lung Transplants

In the area of research, and with varying degrees of success, are transplantations involving the heart, the lung, the heart-lung system as a unit, the liver, the pancreas and bone marrow.

It is not unusual today for a deceased donor to contribute a kidney to each of two recipients, his corneas to two blind persons and other organs and tissues to still other persons.

One of the major problems associated with transplantation of kidneys and other organs is the need for matching the donor organ to the patient who receives it. This is a highly technical problem in which an effort is made to find the closest possible match between the kidney of the donor and the individual who will receive it. It may be necessary to check chemistry of the recipient to insure a minimum of rejection.

### Bodies For Medical Science

All physicians must have a thorough knowledge of the structure of the human body. This is obtained early in their medical education by studying anatomy and dissecting the human body. Ordinarily a body will not be accepted by an anatomy lab if any major organ or tissue has been removed, except perhaps corneas for an eye bank.

The need for human bodies can be met only if people interested in medical education arrange for the contribution of their own bodies to a medical school immediately following death. Bodies and parts also are needed for medical research.

When arrangements have been made with a medical school or with an association that procures bodies for medical schools, the next of kin has only to notify the recipient that the donor has arrangements. The body will be removed to the school. The family may hold a memorial service for the deceased according to their religious beliefs.

Ordinarily, if a body is donated to a medical school for educational purposes, the school will dispose of the remains by cremation. If the donor prefers, the remains may be returned to the family for cremation or burial.

### Anatomical Gift Acts

Since 1968 all 50 states and the District of Columbia have enacted laws that are similar. These laws have removed legal barriers to donation of organs. The most important clause in the laws permits the donation to be made by written and witnessed documents, which may be a card designed to be carried on the person.

The provisions of the act are so designed that the gift is effective only after death. Therefore, the donor should reveal his intentions to his physicians and to as many of his relatives and friends as possible.

No money can be exchanged in making an anatomical donation. However, the surgical costs related to tissue removal and preservation of tissues prior to transplantation are borne by the tissue bank or the recipient of the transplant. Expenses for funeral arrangements are the responsibility of the donor and his family.

The beliefs of most major religious groups are consistent with the concept of tissue and organ donation for transplantation. Personal considerations and beliefs must be carefully evaluated by each donor. When in doubt, consult your own pastor, priest or rabbi.

## SPECIAL NOTICES

---

### Flexible Fiberoptic Sigmoidoscopy — III
Yale University School of Medicine
Friday, October 2, 1981

This conference will be devoted to the technique and use of the Flexible Fiberoptic Sigmoidoscope. It is designed for the practicing physician, primary care physician, practicing internist, surgeon, and house officer.

This course will feature the following lecturers who are established authorities in their fields: Kenneth Barwick, M.D., Assistant Professor of Pathology, Yale School of Medicine; James B. Hastings, M.D., Clinical Assistant Professor of Surgery, Rutgers University School of Medicine; Elliot M. Livstone, M.D., Gastroenterology Section, Associate Professor of Medicine, Yale School of Medicine, and Richard W. McCallum, M.D., Gastroenterology Section, Assistant Professor of Medicine, Yale School of Medicine.

This course is approved for seven hours of Category 1 credit.

Further information and enrollment forms may be obtained from:

Office of Graduate and Continuing Education
Yale University School of Medicine
333 Cedar Street
New Haven, CT 06510
(203) 432-4582

---

### The First Annual N. William Wawro Memorial Cancer Symposium

### "Current Management Principles in Breast Cancer"

will be held at
The University of Connecticut Health Center
on
Saturday, October 24, 1981

This course has been approved for 6 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

For further information contact: Bijay Mukherji, M.D., Department of Medicine, The University of Connecticut Health Center, Farmington, CT 06032 or call (203) 674-2867.

Sponsored By
The University of Connecticut School of Medicine
Hartford Hospital
and the
American Cancer Society

# PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### EMERGENCY MEDICINE

Saint Francis Hospital and Medical Center which is a 700-bed Hospital is currently seeking a full time Emergency Room Physician. We are a teaching Hospital and University affiliated with visits to our Emergency Room numbering about 52,000 annually. There is also a Walk-In Clinic. There is an active residency training program and 24 hour subspecialty coverage. It is preferred that candidates be board eligible or certified in primary care specialty. We offer an attractive salary and a comprehensive benefit package. Please submit CV to: Gloria Wozniak, Director of Personnel, Saint Francis Hospital and Medical Center, 114 Woodland Street, Hartford, CT 06105. A nondiscriminatory affirmative action employer.

Norwalk Hospital, in Conn., a regional community health resource is seeking a physician with experience in emergency care, preferably emergency residency trained. We are an active service including advanced mobile emergency life support personnel. Separate primary care facility, a full range of equipment and specialty physician support. Major affiliation with Yale University. Compensation commensurate with qualifications and experience. Please send resume in confidence to: Melvin Orlins, M.D., Chairman, Dept. of Emergency Medicine,Norwalk Hospital, Maple St., Norwalk, CT 06856.

### FAMILY PRACTICE

University affiliated hospital seeks a board certified (or eligible) Family Physician as a full time Associate Director of an established Family Practice Residency Program with primary responsibility as Chief of Family Medicine Center. Clinical experience preferred. Excellent salary and fringes. Send resume to: Chairman of Search Committee, c/o Personnel Department, St. Joseph Hospital, 128 Strawberry Hill Ave., Stamford, CT 06904.

### INDUSTRIAL AND INSTITUTIONAL MEDICINE

University Connecticut. Physician, primary care to 16,000 students. Requirements include recent active primary care of young adults; ability to co-work with nurse practitioners; compatibility and congeniality in group setting; sensitivity to college student needs; Connecticut MD license and DEA. Night and weekend rotation. Position full time with State fringe, retirement, plus salary $35,000. To be filled September 1981 or soon thereafter. Respond to Edward Wandersee, M.D., Medical Director, University of Connecticut, U-11, Storrs, CT 06268.

### INTERNAL MEDICINE

Opportunity for Internist to purchase established practice in fully equipped office. Doctors desperately needed in the Groton area. Contact: Mr. James B. Coleman, Assistant Vice President, Connecticut Bank & Trust Co., 1 Union Plaza, New London, CT 06320 or Mrs. Elizabeth Force, (203) 445-0060.

CARDIOLOGIST. Immediate opportunity available for person qualified to perform and/or interpret stress testing, 2-D Echocardiography, Swan-Ganz insertion, and temporary and permanent pacemaker implantation. Financial guarantee and other support available. Write: Director, Bradley Memorial Hospital, Meriden Ave., Southington, CT 06489 or call (203) 621-3661 Ext. 331.

### OBSTETRICS AND GYNECOLOGY

Active OB/GYN practice and office immediately available in college, New England city. Well equipped office directly across from progressive general hospital. Previous occupant-owner left for full time teaching. Reply to: Dr. Henry Kaplan, 89 Birchwood Drive, New Britain, CT 06052.

OB/GYN: Board cert. or eligible to practice with multi-specialty group in NW CT. Salary followed by partnership. Send responses to: Robert L. Fisher, M.D., The Sharon Clinic, Upper Main Street, Sharon, CT 06069.

PRO-LIFE, A.B. elig. Obs-Gyn to take over a practice being phased out in S.E. Conn. Write CSMS/OB-GYN (MJA).

### ORTHOPEDIC SURGERY

Well established Board-certified Orthopedic Surgeon in Waterbury, Connecticut, is seeking associate. Attractive practice. Excellent opportunity. Send resume to CSMS/Ortho/V.T.

### SURGERY

Excellent opportunity for surgeon to take over well-established practice in small northwest Connecticut town. 100 bed hospital one block away. Ideal New England setting. Excellent schools nearby. Write Box 817 - Sharon, CT 06069.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### ANESTHESIOLOGY

Availability open. Age 48. Currently in practice. AB-elig. MD, Univ. Salamanca, Salamanca, Spain. Int., Mount Sinai Hosp., Miami Beach, FL; Res., Grasslands Hosp., Valhalla, NY; Fellowship, Jackson Memorial Hosp., Miami, FL. Prefer fee for service, minimum of 800 cases a year and good schools. Small to medium solo, group or assoc. practice. Write: Eduardo E. Darcy, M.D., 7 Blueberry Lane, Brunswick, ME 04011.

### FAMILY PRACTICE

July '82. Age: 29. MD, Brown Univ., Int. & Res., Memorial Hosp., Pawtucket, RI. Presently in practice. Nat'l bds; AB cert. Small to medium solo, group or assoc. practice. Has 2 years of practice post residency; clinical preceptor in family practice at Medical Univ. of SC, Charleston, SC. Write: Steven C. Flood, M.D., 3-B Marsh Harbor, Lady's Island, Beaufort, SC 29902.

### INTERNAL MEDICINE

GASTROENTEROLOGY. Available immediately. Age 41. Nat'l. bds. AB-cert. MD Univ. of Freinrug, Germany; Int. Univ. of Freinrug, Germany. Fellowship, Albert Einstein Coll. of Medicine. Solo, Group, Assoc. and/or Institutional practice preferred. Contact: Dietmar V. Trulzsch, M.D., 273 Murray Ave., Larchmont, NY 10538.

ENDOCRINOLOGY. Available Sept. '81. Age 39. Nat'l bds., AB-cert. MD, Univ. of Conn.; Int. & Res., St. Mary's Hospital, Waterbury; Fellowship, VA Hosp. E. Orange, NJ. Group, assoc. or institutional practice preferred. Write: D.S., P.O. Box 4005, Waterbury, CT 06704.

**ELMCREST**

**A COMPREHENSIVE**
**MENTAL HEALTH TREATMENT CENTER**
**FOR ADULTS AND ADOLESCENTS**

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Matthew Weinstein**
*Administrator*

**Lane Ameen,** M.D., F.A.P.A
*Medical Director*

**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

- ☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
- ☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
- ☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
- ☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
- ☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
- ☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
- ☐ GERIATRIC GUIDANCE CENTER
- ☐ DAY HOSPITAL

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

---

AYR INSURANCE AGENCY

JANIS AYR ESPOSITO ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

## INTERNAL MEDICINE—Continued

PULMONARY MEDICINE. July '82. Age 29. MD, Punjab Univ., India; Int. and Res., St. Francis General Hospital, Pittsburgh, PA. AB cert. (internal medicine); AB elig. (pulmonary medicine). Prefer medium to large, solo group or assoc. practice. Write: Surinder K. Aneja, M.D., 90A Garden Vill Drive, Apt. #4, Cheektowaga, NY 14227.

July '82. Allergy/Immunology. Age 31. MD, New York University School of Medicine; Int. and Res., Bellevue-NYU Medical Center; Fellowship, Barnes Hospital, Washington University Medical Center. Nt'l bds; AB cert. (internal medicine), elig. (allergy). Solo, group, associate or institutional practice preferred in large community. Write: Leonard Cohen, M.D., Ph.D., 7545 York Drive, Clayton, MO 63105.

GASTROENTEROLOGY. July '82. Age 30. Nat'l bds.; AB-cert. MD, Chicago Medical; Int. & Res., Beth Isreal Med. Center; Fellowship, Bridgeport Hosp. Has extensive clincial exposure and primary patient care. Group or solo practice preferred. Contact: Alan J. Greenwald, M.D., 51d Wedgewood Drive, Stratford, CT 06497.

CARDIOLOGY. July '82. Age 30. MD, Baroda Medical College, India; Int. Beckman Downtown Hosp., NY; Fellowship, Good Samaritan Hosp., Phoenix, AZ. AB cert. Medium to large community in solo, group, assoc., or institutional type practice. Prefers invasive or noninvasive cardiology. Contact: Raj Savajiyani, M.D., 3807 N. 30th St., #25, Phoenix, AZ 85016.

July '82. Age 29. MD., B.J. Medical College, Ahmedabad, India, Int., Civil Hospital, Ahmedabad, India; Res., Helene Fuld Medical Center, Trenton, NJ and Hahnemann Medical College, Philadelphia, PA; Fellowship, Cardiology, Washington Univ. Medical Center and The Jewish Hospital, St. Louis, MO. FLEX; AB cert. Medium to large solo, group or associate practice. Write: Bharat J. Shah, M.D., 7767-B Charing Square, St. Louis, MO 63119.

HEMATOLOGY-ONCOLOGY. Sept. '81. Age 32. MD, Seth G.S. Med. College, Bombay, India. Int., Res., (Internal Medicine) and Fellowship, (Hem/Onc.) all at the VA Hospital, Northport, NY. AB cert. Presently, full-time staff physician. Medium, large, group or assoc. practice preferred. Write: INT/BJS, c/o CSMS.

HEMATOLOGY-ONCOLOGY. July '82. Age 29. MD, New York Med. College. Int. & Res., Long Island Jewish Med. Center. Nat'l bds; AB cert (Internal Medicine), AB elib. (Hem./Onc.). Fellowship, Albany Medical College. Group or Assoc. practice. Write: Michael Willen, M.D., 164 Homestead Ave., Albany, NY 12203.

## NEUROLOGY

July '82. Age 28. MD, Albany Medical College; Int. and Res., Albany Medical Center Hospital. Nat'l bds; AB elig. Group, assoc. or institutional practice. Write: Dennis D. Dewey, M.D., 32 B King Court, Selkirk, NY 12158.

## OBSTETRICS/GYNECOLOGY

July '82. Age: 29. Nat' bds. AB-elig. MD, Loyola University, Chicago. Int. & Res. Michael Reese Hosp. & Med. Center. Group or assoc. practice preferred. Must be within 1 hour drive of suitable residency (in Pathology) for spouse. Contact, Karol J. Chacho, M.D., 1170 B. Bunker Hill Ct, Wheaton, IL 60187.

## OTOLARYNGOLOGY

Available Aug. '82. Age. 32. Currently in practice. Nat'l bds.; AB-cert. MD, Temple; Int. & Res., Philadelphia Naval Hosp.; Fellowship, Fitzsimons Army Medical Center, Denver, CO. Special interests in Otology and Cosmetic Surgery—broad experience in all phases of ENT. Medium to large solo, group or assoc. practice preferred. Write: Donald V. Wilson, M.D., 20 Lahiki Circle, Aiea, Hawaii 96701.

## PATHOLOGY

Anatomic and Clinical Pathology. Available on three months notice. Age 38. Connecticut license. Currently in practice. FLEX. Ab-cert. MD, University of Bologna, Italy; Int. & Res., New Rochelle Hosp. Med. Center, NY. Group, Assoc. or Institutional practice preferred. Contact: Joseph V. Napolitano, M.D., 7 Howland Rd., Middletown, NJ 07748.

CLINICAL PATHOLOGY & BLOOD BANK. Aug. '81. Age 31. MD, Vanderbilt. Int., Tampa VAH (Path.); Res., George Washington Hosp. (Clinical Path.); Fellowship, NY Blood Center. Nat'l bds; AB cert. Write: Daniel Williams, Jr., M.D., 77 Rippowam Rd., Apt. A, Stamford, CT 06902.

## PEDIATRICS

Available immediately. Age 46. MD, University of Heidelberg, Germany. Int., Fitkin Memorial Hosp., NY; Res. Children's Hosp of Washington, DC and Univ. of Bonn, Germany; Fellowship, Pediatric Hematol/Oncol., Univ. of Michigan. Nat'l bds. FLEX; AB cert.; Group, assoc., or institutional practice. Prefers part or full time close to shoreline area. Write: CSMS/PED/GTL

## RADIOLOGY

DIAGNOSTIC RADIOLOGY. July '82. Age 29. MD, St. Louis University School of Medicine; Int., Rhode Island Hospital, Providence; Res., Hartford Hospital, Hartford; Fellowship, Dept. of Nuclear Medicine, University of Conn. Health Center, Farmington. Nat'l bds; AB cert. Group practice preferred. Write: CSMS/RAD/DMR.

## SURGERY

Aug. '82. Age 38. MD, Medical College of Pennsylvania; Int. and Res., Walter Reed Army Med. Center. Presently in practice. Nat'l bds. AB cert. Group or assoc. practice preferred in medium community. Write: Francis W. Conn, M.D., 37 Birch Drive, DeRidder, LA 70634.

Aug. '82. Age 30. MD, Univ. of Puerto Rico. Int. & Res., State Univ. of NY at Stony Brook; Fellowship, Allentown and Sacred Heart Hosp. Center. Nat'l bds. Medium to large, group or assoc. practice in General Surgery and Peripheral Vascular Surgery preferred. Write: Ruben J. Delgado, M.D., 293 First St., Mineola, NY 11501.

July '81. Age 41. Currently in practice. Nat'l bds.; FLEX; AB-cert. MD, University of the Philippines; Int., Cook County Hosp., Chicago, IL; Res., NY Med. Coll; Fellowship, NY Med. Coll. & Nassau Hospital. Group or assoc. practice preferred. Write: Eligio R. Quijano, Jr., M.D., 24 Snapdragon Lane, Roslyn Heights, NY 11577.

## UROLOGY

Oct. '81. Age 39. AB-cert. Currently in practice. MD, Ghent Med. School; Int., Long Island College Hosp.; Res., Metropolitan Hosp., NY; Fellowship, Nassau County Med. Center. Medium to large community and group or assoc. practice preferred. Contact: Albert Kaufman, M.D., 2020 Forestdale Drive, Silver Springs, MD 20903.

FOR BEAUTY'S ULTIMATE TOUCH, THE LADY NEEDS A ROLEX.

Decisive, yet dainty, the Rolex Lady-Date is an ideal complement to her elusive style. Scaled down in size, but equal in craftsmanship to the man's Rolex, it combines reliability with feminine elegance and distinct design. As perfect on dance floor as ocean floor, this 26-jewel, self-winding timepiece has a 14kt. gold fluted bezel, and stainless steel Oyster case guaranteed pressure-proof down to 165 feet. It also comes in 18kt. yellow gold with matching bracelet.

LUX BOND Green & Stevens
AGS
FINE JEWELERS SINCE 1903

HARTFORD 15 Pratt Street, 278-3050
WEST HARTFORD 60 LaSalle Rd., 236-5811

NEW YORK FERTILITY RESEARCH FOUNDATION, INC.

For the Investigation of Problems of Human Infertility

The Foundation provides a complete diagnostic and consultation service for infertile couples. Investigations are conducted by well-known specialists in conjunction with consultants in the various fields of medicine related to infertility.

The Foundation is supported by an in-house modern laboratory equipped to do most tests required for diagnosis and treatment. Literature on request.

1430 Second Avenue, New York, N.Y. 10021
Phone: 744-5500

# CLASSIFIED

PRACTICE FOR SALE. Connecticut, Fairfield County. Active General & Family Practice. Home/Office combination, one hour from N.Y.C. in residential 2 acre zone rural setting. Purpose built fully equipped office, 4 exam rooms, reception area, X-ray, Lab, E.K.G., etc. Reply to PJG, *Connecticut Medicine,* 160 St. Ronan St., New Haven, CT 06511.

ASS'T DIR., EMERGENCY SERVICES. Seeking a personable, energetic career ACEP with good track record for full-time responsibilities in an expanding emergency services department within a central Connecticut General Hospital. Preferred candidate will possess proven administrative, communication, and interpersonal skills, plus appropriate experience in E.R. Excellent schedule, salary and benefit package. Please send resume to JJK, *Connecticut Medicine,* 160 St. Ronan St., New Haven, CT 06511.

### CLASSIFIED ADVERTISING RATES

$40.00 for 25 words or less; 50 cents for each additional word.

$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.

No agency commission on classified advertising.

Closing date: Copy must be received by the first day of month preceding month of issue.

A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

---

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE.* The *JOURNAL* does not hold itself responsible for statements made by any contributor.

REPRINTS are available at an established schedule of costs. A reprint rate and order form is sent to the author with his page proofs.

ALTHOUGH all advertising material accepted is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to:
*CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

*CONNECTICUT MEDICINE* is the official publication of the Connecticut State Medical Society, a voluntary non-profit association organized for scientific and educational purposes, published monthly for members of the Connecticut State Medical Society.

# The University Sports Medicine Program

HARRY R. GOSSLING, M.D. AND JOHN P. FULKERSON, M.D.

There is growing interest in sports medicine presently, with many sincere and capable individuals involved at all levels of care. It is the responsibility of such individuals to maximize their capabilities through contact with academic programs and training courses in their geographic area. The university hospital should provide these opportunities if possible.

## The Need

There are many aspects of sports medicine which need further development and study. The academic sports medicine program can help provide a greater understanding of the benefits of sports in diminishing emotional stress. Performance evaluation from a physiologic and mechanical standpoint needs to be provided on different levels with resources available within the University to aid in developing such programs. Those in the community capable of high quality care in these areas need to be supported and encouraged. Prevention and repair of injuries must be studied continually in order to find optimal means of avoiding and minimizing physical damage to the athlete. Rehabilitation techniques are improving rapidly because of the great interest in sports medicine so one specific purpose of a university sports medicine program should be to study and develop such techniques both intramurally and extramurally. Education is a primary responsibility of an academic sports medicine program and, ideally, coaches, trainers, teachers, physical therapists, emergency medical technicians, nurses, physicians, and scientists should seek improvement of their skills and knowledge continually in order to provide high quality care for injured athletes. Basic and applied research in areas such as connective tissue, muscle and cardiopulmonary function can best be carried out in the University setting. The University can provide a forum for the coordination of these efforts and can provide support for those administering care on all levels.

## The Team

Sports medicine is a team effort involving individuals from many varied specialities and interests. No one specialist is ideally suited to care for the athlete. Physicians should coordinate the care of athletes, and physicians in virtually every specialty become involved with athletes at some time or other. The internist screens the athlete and makes sure that the elderly patient is physically able to tolerate athletic stress. Medical subspecialists provide specialized testing and consultation particularly when there are notable problems. Cardiologists and pulmonary specialists have been particularly involved in the training of athletes. The orthopedic surgeon cares for specific musculoskeletal injuries while surgical subspecialists care for a variety of sports-related problems such as abdominal trauma (general surgeon) in football, prostatitis and genito-urinary problems (urologist) in bicycling and contact sports, conjunctivitis (opthalmologist) and ear, nose and throat problems (otorhinolaryngologist) in swimmers, and head trauma (neurosurgeon) in contact sports. Pediatricians, family physicians, podiatrists, psychiatrists, gynecologists, and dermatologists also have important roles in caring for the athlete. The basic scientist is an important member of the sports medicine team and provides the basis for innovative work and development of the field. Basic scientists come from many specialties, but physiology is particularly important in our understanding of athletic performance. Physical therapists, psychologists, nutritionists, mechanical engineers, electronic engineers, educators, management staff and trainers as well as many others in fields of related interest are important in the development of a comprehensive sports medicine program. The academic sports medicine program should develop a core of such individuals who can work together sharing their expertise and aiding others in similar capacities in the community. The University should help coordinate an interchange of ideas and experience.

## The Financing

Financial support is necessary to provide an environment for individuals to work together. Because of the

---

HARRY R. GOSSLING, M.D., Professor and Chairman, Orthopedic Surgery; JOHN P. FULKERSON, M.D., Assistant Professor, Orthopedic Surgery and Director of Sports Injury and Knee Clinic; both of the University of Connecticut School of Medicine, Farmington, CT.

many individuals who benefit from an academic sports medicine program, there may be many potential sources of financial support for such programs. The community in general, university, industry, organized athletics, and the individual athlete provide a wide range of interested parties. Community leaders, able individuals, corporate and business executives, professional leaders, the public through state and federal grants, and private foundations may also provide support for well-planned academic programs. With cutbacks in state and federal funds, creativity in obtaining support may become more important in the future. Because sports medicine affects so many individuals in society, there must be increasing recognition of the necessity to contribute to promising programs.

### The Benefits

A well functioning academic sports medicine program benefits many. Improved knowledge of the effects of athletic stress on the growing child will benefit both the present and future of individual children. High school athletes are most directly affected by the specific, knowledgeable care of injuries. The college athlete benefits similarly and may be even more dependent on optimal care. Professional athletes provide a unique and more difficult challenge but stand to benefit greatly if excellent sports medicine care is available. The university sports medicine program should provide a standard of excellence in the clinical care of injured athletes. The academic influence should provide an added degree of temperance which may convince the athlete to obtain adequate healing before attempting a return to participation. At the same time, innovative methods of splinting and rehabilitation may permit the professional athlete to return to gainful employment sooner. A world-class athlete will benefit most if academic sports medicine is successful in convincing those involved with the high level athlete that drugs and artificial means of training should be avoided. This trend in high level sports needs to be reversed and academic sports medicine can study the phenomenon and discourage abuses.

As sports become more important in society, they can be important in improving the health of workers in industry. Improved physical conditioning, improved morale, and elimination of bad habits through athletic training can improve productivity and worker satisfaction. The academic sports medicine program can provide models of programs which can be implemented in industry for the benefit of many. Commercial gimmicks need to be discouraged and inexpensive, quality training programs need to be fostered.

### Conclusion

In conclusion, the academic sports medicine program should provide a broad base of support, stressing excellence and scientific honesty in the pursuit of sports medicine at all levels. It should seek new information in all areas of sports medicine, should provide quality resources for practicing physicians and therapists, and should coordinate specialists in many areas to exchange and develop new ideas. The ultimate goal should be optimal care with maximal understanding at minimal cost to individuals.

---

# Beneficial Effects of Exercise and Current Concepts in Adult Fitness

DAVID N. CAMAIONE, PH.D. AND STEPHEN T. SINATRA, M.D.

**ABSTRACT - An adult fitness program can be very helpful. If one follows an individually prescribed program of physical activity using an appropriate manipulation of the principles of conditioning, positive physiologic results will become apparent. Before a healthy individual, especially one over the age of 35, embarks upon a program of vigorous activity, consultation with a physician is suggested. A life-long commitment to physical activity using common sense, moderation and sound principles from the physiology of fitness can improve appreciably one's quality of life.**

Recently, the role of exercise in the primary prevention of coronary heart disease has been under considerable scrutiny by health care professionals. Although numerous epidemiologic studies[1-5] have shown an in-

---

DAVID N. CAMAIONE, PH.D., Department Head, Sport and Leisure Studies, The University of Connecticut, Storrs, CT. STEPHEN T. SINATRA, M.D., Cardiologist, Manchester Memorial Hospital, Manchester, CT; Assistant Clinical Professor of Medicine, University of Connecticut School of Medicine, Farmington, CT.

verse relationship between physical exercise and coronary disease, the mechanisms responsible for this relationship are not well defined. Morever, the above studies possess certain weaknesses. They were not scientifically-designed studies that controlled all variables; they did not possess experimental and control groups, and the sample populations were not randomly selected for a select group in which certain characteristics appear to have a relationship with the incidence of coronary heart disease. If exercise does have beneficial effects in health, what are the parameters and how are they mediated? Previous investigators[6] have suggested that exercise may help modify other cardiovascular risk factors, and others[7] have shown that exercising individuals may take greater responsibility for their own health, particularly in diet modification. Although some prevalent myths have occurred concerning exercise and its effects on longevity, coronary artery dilatation, and collateral circulation, there appears to be agreement concerning the psychological, biochemical and physiological effects of regular exercise.

The link between stress, biochemical parameters, and cardiovascular disease has been gaining increasing popularity.[8, 10, 11] Roseman et al[8] in the Western collaborative study demonstrated that individuals with coronary-prone behaviour who experienced chronic anxiety may be at a two-fold incidence in the risk of developing coronary heart disease. Regular exercise may alter the type-A behaviour pattern[9] and therefore influence coronary heart disease through the modification of coronary-prone behaviour. According to Eliot,[10] one of the major beneficial effects of exercise is the reduction of emotional stress. In highly arousable individuals with a "chronic alarm reaction," exercise may be beneficial in the physiological recoupling of the cardiovascular and muscular system. Dynamic exercise with the secondary effects on vasodilatation appears to discharge the overstimulated cardiovascular system prepared in a chronic state of visceral vascular readiness. Since overstimulated neural mechanisms may accelerate arthrogenesis,[11, 12] dynamic exercise may perhaps assuage the overreactive personality resulting in alleviation of psychological arousal, allowing for a reduction in biochemical changes that may eventually predispose to pathological conditions.

The beneficial physiological and biochemical effects of exercise are particularly noteworthy. Dynamic exercise with the secondary effects on conditioning results in a lower heart rate and blood pressure. Endurance conditioning reduces myocardial oxygen consumption, assuages sinus tachycardia and increases anginal threshold in patients.[13] Exercise is also associated with a reduction in weight and an increase in body mass with a secondary effect in lowering blood pressure.[6] Chronic training not only improves cardiovascular efficiency but also has profound biochemical effects upon the organism. Recently, there have been data to demonstrate that exercise has a direct relationship to serum HDL levels. Jogging and running appear to have a more significant effect on HDL than diet alone. Hartung et al[14] demonstrated that marathon runners had HDL levels of 65 mg. per deciliter as opposed to joggers 58 mg. per deciliter, and inactive men 43 mg. per deciliter. Other important biochemical considerations of exercise would include a reduction in blood viscosity[9] and favorable effects on insulin and glucose metabolism.[15]

There seems to be considerable evidence to indicate that exercise influences coronary heart disease through its psychological, biochemical and physiological effects. Although there is no hard evidence to indicate that exercise increases life expectancy, it appears that regular exercise may possibly modify unhealthy behavioral traits such as excessive stress and tension, hypertension, cholesterol levels and obesity. There is convincing evidence that regular exercise in combination with proper diet, abstention from cigarette smoking, moderation in the use of alcohol and drugs, safety consciousness, relaxation and wise management of stress, results in less morbidity and mortality as well as better general health and functional ability.[16] The emphasis, therefore, in this article is to have the reader understand the use of exercise as adjuvant therapy in the modification and maintenance of a healthy life style.

## Health-related Physical Fitness Concept

Physical fitness means many things to many people. The AAHPERD defines it as a "multifaceted continuum measuring the quality of health ranging from death and diseases to the optimal functional abilities of various physical aspects of life."[17] Four separate and distinct items known collectively as health-related physical fitness components are:

**Body Composition -**
the ratio between lean body weight (bone, muscle, connective tissue) and fat weight.

**Cardiorespiratory Fitness -**
the ability of the circulatory and respiratory systems to deliver oxygen and nutrients to the body cells and carry away carbon dioxide and waste products.

**Flexibility -**
the ability of the body or body parts to go through full range of motion.

**Muscular Fitness -**
the ability of the muscular system to exert force one time (strength) or repeatedly (endurance).

In sum, any of the four components which do not measure up to normal levels of fitness standards may in fact impact negatively on a person's health, most notably the cardiorespiratory fitness component - hence, the term health-related physical fitness. It is the primary function of a well organized program of adult fitness to improve and/or maintain these four health-related physical fitness levels of its participants.

### Types of Adult Fitness Programs

There are basically two types of adult fitness programs in vogue today, unsupervised and supervised. Unsupervised fitness programs include participants who either received prior experience in maintaining their health-related physical status or have received medical clearance by a physican to embark on a program of exercise without an exercise leader, specialist, or equivalent person with expertise in the physiology of fitness.

Supervised programs are of two types: non-medically supervised and medically supervised. The former type permits participants to involve themselves in a program of individually prescribed exercise programs under the guidance of an exercise leader, specialist or equivalent. Such programs may be found in YMCAs, YWCAs, Senior Centers, industrial and corporate fitness centers, and the health spa industry.

### Physiological Principles of Fitness

Many fundamental principles of exercise are included in exercise physiology texts. Of these, the most important are:

1) Specificity
2) Progressive overload
3) Regularity
4) Individual differences
5) Initial level of fitness

In order for certain physiological adjustments to become manifest, these principles must be followed. Adaptations to exercise are specific[18, 19] and only certain benefits will be gained from any one form of exercise.

Overload refers to exercising at greater than normal levels. For example, if one is to improve strength and/or endurance, steady increase in workloads from one exercise session to another is necessary. To stress the cardiorespiratory system, the muscular effort must be at an appropriate level of intensity to cause improvement in cardiorespiratory fitness. Thus, unless a "training stimulus" that is beyond the threshold level is introduced progressively, positive changes will not occur.

Progression is an important ingredient for developing a sound fitness program and for achieving desired goals. "Unfit and/or overweight individuals should begin an exercise program at a low level."[16] Little scientific evidence exists as to the exact method of progression but, generally, maximum increase in total work effort should not be greater than 10% per week. Much depends upon the individual's desires, needs and interests, as well as the intensity, duration, and frequency of activity. It is generally best to progress slowly, increase gradually and use perceived effort (exertion) as a guide to progression.

A necessary ingredient for fitness is that one exercise on a regular basis, preferably on alternate days.

Individuals enter an exercise program at different initial fitness levels and progress at different rates. Their needs, goals and interests are dissimilar, thus individually tailored programs are essential. The intensity level for one person using an activity is different from another individual. Individuals also possess different maximal capacities. Thus, it is important that a sound pre-screening evaluation occur before embarking upon a rigorous exercise program to assess individual differences.

### ACSM Guidelines for Evaluation of Participant Health Status Prior to Exercise Testing

The American College of Sports Medicine[20] has developed a classification chart using age and health status of participants as the guide for determining whether one should undergo a comprehensive evaluation profile. These categories are listed below:

A - Asymptomatic, physically active persons of any age without CHD risk factors or disease.
  These individuals require little supervision if current conditioning principles (variables) are maintained.
  They may require counsel and supervision if the program is interrupted by an injury.
  It is advisable for most persons over 35 to consult a physician when changes in their exercise program are needed. Generally these persons can embark on an exercise program without a comprehensive evaluation.

B - Asymptomatic, physically inactive persons less than 35 years old without CHD risk factors or disease.
  Those individuals who wish to increase their habitual level of physical activity may do so with minimal risk.
  Those with questions about one's health status should consult a physician.

C - Asymptomatic, physically inactive persons 35 years and older without CHD risk factors or disease.

D - Asymptomatic, physically active or inactive persons of any age with CHD risk factors but no known disease.
  Individuals in categories C and D should have a comprehensive medical evaluation and a graded exercise test.
  The test may be administered by certified personnel with a physician in the testing area.

E - Asymptomatic persons of any age with known disease.

F - Symptomatic, physically active persons clinically stable for six months or longer.

G - Symptomatic, physically inactive persons clinically stable for six months or longer.

Individuals in categories E, F and G with stable status (healed myocardial infarction, angina pectoris, pulmonary disease or claudication) need careful evaluation of specific medical problems and required medications. The graded exercise test must be administered by certified personnel with a physician in visual contact with the patient during the test.

H - Symptomatic persons with recent onset of CHD or a change in disease status (recent M.I., unstable angina, coronary artery bypass surgery).

Same as categories E, F, G plus a thorough careful assessment of signs and symptoms, ECG and of the type and dosage of medication by a physician.

I - Persons for whom exercise is contraindicated. Those individuals should not be admitted to an exercise program until the medical problems have been evaluated and treated. A comprehensive listing of these disease states are noted in Table 3 in reference 20.

The recommendations stated under each of the above categories have received wide acceptance by the health professions.

### ACSM Guidelines For Exercise Prescription*

Exercise prescription include the following five components:

1) Type of activity; 2) Duration of activity; 3)Frequency of activity; 4) Intensity of activity; 5) Progression of physical activity.

Through much research has been done concerning exercise prescription for asymptomatic adults, the principles of exercise prescription are the same for the asymptomatic and the symptomatic participant.[20]

The ACSM extablishes the following recommendations for the quantity and quality of exercise for developing and maintaining cardiorespiratory fitness and body composition.

*Type of Activity*—Any activity that uses large muscle groups and is continuous, rhythmical and aerobic in nature, eg, jogging-running, walking-hiking, swimming, skating, bicycling, rowing, cross-country skiing, rope-skipping, and several endurance-like sport forms.

*Duration of Activity*—Fifteen to sixty minutes of continuous or discontinuous aerobic activity. Duration depends upon the intensity of the activity. Those with low intensity demands can be continued for long periods of time; those with high intensity demands do not last long and are not recommended for the non-athletic adult. C-R fitness is best achieved with low to moderate intensities conducted over a long period of time. The potential hazards of injury and compliance problems are associated with high intensity activities.

*Frequency of Activity*—3 to 5 days per week. Intensity of Activity - 60% to 90% of maximum heart rate reserve or 50% to 85% of $\dot{V}O_2$ max. There are a number of ways to determine the intensity of an activity session. The easiest is to use the heart rate response. Three methods are suggested in the ACSM guidelines. The first is to plot the slope of the line between the individual's exercise heart rates and the exercise intensity in either METS** or $\dot{V}O_2$ (see figure 1). In this example, the maximum capacity in METS was ten, thus for the individual to work within the prescribed intensity (training) zone, he/she works no less than 7 METS and no greater than 9 METS or within a heart rate target zone of 144 to 168.

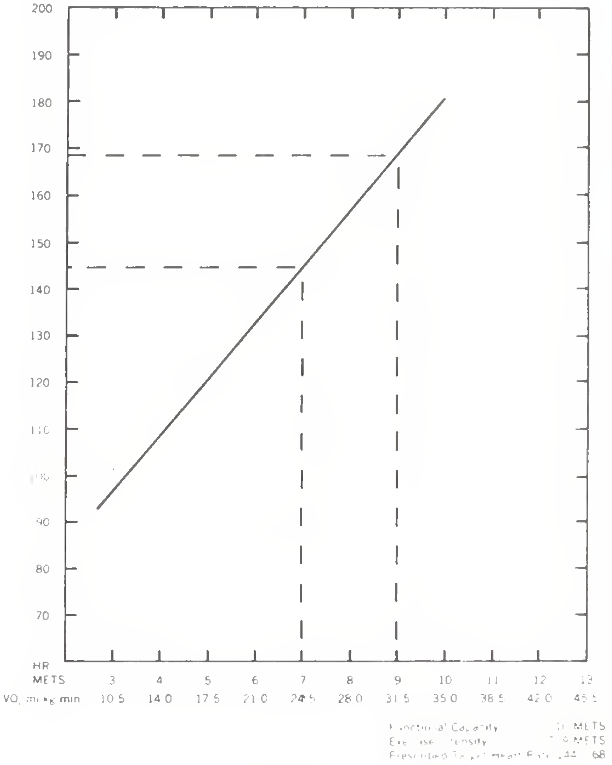


Figure 1
Plotting the target heart rate.

The second method was developed by Karvonen[21] in which the heart rate reserve (maximum heart rate minus resting heart rate) is multiplied by a conditioning percentage. This value is then added to the resting heart rate to obtain the *target heart rate.*

---

*(Taken from ACSM Guidelines for Graded Exercise Testing and Prescription. Philadelphia: Lea and Febiger, 1980).

**+MET - Is the equivalent of a resting oxygen consumption taken in a sitting position and is approximately 3.5 ml/kg. min.

For example:

Maximum Heart Rate = 180
Resting Heart Rate = 70
110
Conditioning Intensity = .60
66.0
Resting Heart Rate = 70
Min. Target Heart Rate = 136

A third method is the "zero to peak" method in which the determination of the target heart rate is a given percentage (conditioning intensity) of the maximum heart rate. For example, if the maximum heart rate is 180 BPM, and 70% is selected as the conditioning stinulus, it would be .70 x 180 - 126 BPM. The first two methods yield similar results but are more cumbersome; the third method is easiest but it underestimates the THR for a given MET level by approximately 15%, thus an adjustment of an increase of 10% to 15% is necessary.

### Interrelationship of the Variables

The key to improving physiologic function is the total work or energy cost of the exercise program, which is commonly expressed as: Energy Cost = frequency x intensity x duration.[16] Pollock and others[22] found that it took only a few minutes longer[5-10] each day for slow joggers to achieve the same physiologic results as fast joggers. Research has indicated also that frequencies greater than five-times per week lead to little further improvement and increased likelihood of stress-related injuries with the added days of training.[23] Though the energy cost of running is greater than for walking, the enjoyment of a brisk walk for many is preferable to a run; in fact, evidence exists that brisk walking is comparable to running when measuring its effects on cardiorespiratory fitness if the total work effort is the same when manipulating the variables of duration and intensity.[18] Regular moderate to high intensity activities of different types yield similar good results, whereas activities below the training stimulus level and which are intermittent yield poor physiologic results.[24 - 26]

In summary, if the variables of frequency, intensity, and duration of several aerobic activities are similar for any specific fitness program, the physiologic benefits will be the same for the individual.

### The Exercise Session

Three separate and distinct plans of any exercise session have been identified; these are the warm-up phase, the workout phase, and the warm-down phase. To properly undergo an exercise program it is necessary to always include these three phases. Each phase has specific purposes. The warm-up phase which normally lasts five to fifteen minutes is for the express purpose of increasing the body temperature, loosening the body parts to prevent injury or undue soreness and elevating the heart rate. This prepares the body for the workout phase. Generally the older the person, the longer he should warm up.

The workout phase which normally lasts fifteen to sixty minutes includes those activities which are specific to the individual's stated purposes. To improve cardiorespiratory fitness and body composition, continuous aerobic activities of a low to moderate intensity over a long period of time are necessary for positive benefits. To improve muscular fitness, resistive equipment, light weights and high repetitions is appropriate for increased muscular endurance and strength.

The warm-down phase which normally lasts five to fifteen minutes brings the physiologic systems back toward resting levels at a gradual pace. After a vigorous workout, cardiac output can be as high as three to four times the resting level for an individual. It is important to cool down to permit gradual readaptation of the system.

### The Benefits of Exercise

The benefits of physical activity are numerous with substantial effects upon the psychological, biochemical and physiological state of the individual. Even though research does not demonstrate a cause-effect relationship between increased physical activity and a decrease incidence of coronary heart disease, no evidence exists that prudent use of physical activity is harmful. Although some individuals will die while exercising, the probability of such an event is extremely low. With thousands of individuals who have undergone Cooper's rigorous program, not one incidence of death due to physical activity has occurred.[6, 27] Several experimental investigations and human population studies indicate that regular physical activity may operate against coronary heart disease in a variety of beneficial ways.[5-9, 10, 13 - 16] These are; 1) improved myocardial circulation and metabolism; 2) enhanced mechanical or contractile properties of the myocardium; 3) alter insulin requirements; 4) establish more favorable blood viscosity; 5) enhance the blood cholesterol profile, increase HDL; 6) favorably alter heart rate and blood pressure; 7) achieve a more desirable body composition; 8) establish a more favorable neural hormonal balance; 9) provide a favorable outlet for psychogenic stress and tension; 10) modify type A behaviour pattern.

### REFERENCES

1. Taylor HL, Klepatar E, Keys A, Parlin W, Blackburn H and Puchner T: Death Rates Among Physically Active and Sedentary Employees of the Railroad Industry. Am Jo Public Health 52:1697, 1962
2. Morris JM and Crawford NM: Coronary Heart Disease and Physical Activity of Work. BMJ 2:485, 1958
3. Morris JN, Heady JA, Raffle PAB, Roberts CG and Parks JW: Coronary Heart Disease and Physical Activity of Work. Lancet 2:1053, 1953
4. Morris JN, Kogan A, Patterson DC, Gardner MJ and Raffle PAB: Incidence and Prediction of Ischemic Heart Disease in London Busmen. Lancet 2:553, 1966

5. Paffenbarger RS Jr, Laughlin ME: Work Activity of Longshoremen. NEJM 282: 1109-114, 1970
6. Cooper KH, Pollock ML, Martin RP, White SR, Linnerud AC and Jackson A: Physical Fitness Levels vs. Selected Coronary Risk Factors: A Cross Sectional Study. JAMA 236:166-169, 1976
7. Perrier Survey of Fitness in America. Study No. S2813. Louis Harris and Associates, Inc., 1978
8. Rosenman RH, Brand RJ, Jenkins D, et al: Coronary Heart Disease in the Western Collaborative Group Study Final Follow-up Experience of 8½ years. JAMA 233: 872-877, 1975
9. Pickering TG: Exercise and the Prevention of Coronary Heart Disease, Cardiovascular Review and Reports. 2: 233-236, 1981
10. Eliot RS: Stress and the Major Cardiovascular Disorders, Futura Publishing Co. New York 1979
11. Carruthers ME: Aggression and Atheroma. Lancet 2: 1170, 1969
12. Gutstein WH, Harrison J, et al: Neural Factors Contribute to Atherogenesis. Science 199: 449, 1978
13. Barnard RJ, MacAlpin R, Kaltus AA, Buckberg GD: Effect of Training On Myocardial Oxygen Supply/Demand Balance. Circulation 56, 289-291, 1977
14. Hartung GH, et al: Relation of Diet To HDL Cholesterol In Middle-Aged Marathon Runners, Jogger, and Inactive Men. NEJM 302, 357-361, 1980
15. Pederson D, Beck-Nielson H, Heding, L: Increased Insulin Receptors After Exercise In Patients With Insulin Dependent Diabetes Mellitus. NEJM 1302: 886-892, 1980
16. Pollock ML and Blair SN: Exercise Prescription. JOPER, 52:30, 1980
17. AAHPERD, Health-Related Physical Fitness Test Manual. Reston, VA, 1981
18. Pollock ML, Wilmore JH and Fox SM: Health and Fitness Through Physical Activity, NY. John Wiley and Sons 1978
19. Price CS, Pollock ML, Gettman LR and Kent DA: Physical Fitness Programs For Law Enforcement Officers: A Manual For Police Administrators. Wash, DC: US Government Printing Office, 1977
20. ACSM Guidelines For Graded Exercise Testing And Exercise Prescription. Philadelphia: Lea And Febiger, 1980
21. Karvonen MJ, Kentals E and Mustala D: The Effects Of Training On Heart Rate, A Longitudinal Study. Annales Medicine Experimentalis Et Bioloque Fenniae 35:305, 1957
22. Pollock ML, Miller H, Janeway R, Linnerud AC, Robertson B and Valentino R: Effects Of Walking On Body Composition And Cardiovascular Function of Middle-Aged Men. Journal Of Applied Physiology 30:126, 1971
23. Pollock ML, Gettman LR, Milesis C, Bah MD, Durstine JL and Johnson R: Effects Of Frequency And Duration Of Training On Attrition And Incidence Of Injury. 9:31, 1977
24. Cumming GR, Goulding D and Baggley G: Failure Of School Physical Education To Improve Cardiovascular Fitness. Canadian Medical Association Journal 101:69, 1969
25. Dwyre T, Coonan WE, Worsley A and Leitch DR: An Assessment Of The Effects Of Two Physical Activity Programs On Coronary Heart Disease Risk Factors In Primary School Children. Community Health Studies 3:196, 1979
26. Pollock ML: How Much Exercise Is Enough? Physician And Sports-Medicine 6:50, 1978
27. Cooper KW, Purdy JG, White SR, Pollock ML and Linnerud AC: Age-Fitness Adjusted Maximal Heart Rates. In D. Brunner And E. Jokl (ed.) The Role Of Exercise In Internal Medicine, Basal, Switzerland, Karger, 1975

# Secondary School Sportsmedicine

## *On Providing Optimal Care for the Interscholastic Athlete

NORMAN A. ZLOTSKY, M.D.

**ABSTRACT - There is an established need to upgrade Sportsmedicine at the secondary school level. An optimal program is possible by making improvements where most deficiencies are now found—prevention, early recognition of injury, and full rehabilitation after injury. These goals are best implemented by adding an athletic trainer and developing specific guidelines for all personnel involved in Sportsmedicine in the school system.**

### Introduction

There has been an explosion of interest and information on the prevention, early care, definitive treatment, and rehabilitation of sports-related injuries in the past several years. Both the Connecticut Association of Boards of Education and the Connecticut Association of Secondary Schools have held workshops on Sportsmedicine which have emphasized optimal programs and limited exposure to liability. The Connecticut Interscholastic Athletic Conference, recognizing the importance of medical input, has had a medical consultant for the past three years. Rule changes in various sports have reflected this medical input.

The Department of Health, Education and Welfare released a report, mandated by Congress, in February 1979 detailing sports injuries experienced countrywide

---

NORMAN A. ZLOTSKY, M.D., Orthopedic Service, Rockville General Hospital; Consultant, Sportsmedicine, Connecticut Interscholastic Athletic Conference; Assistant Clinical Professor of Surgery (Orthopedics), University of Connecticut School of Medicine, Farmington, CT.

*Excerpted from "Guidelines for Program Development in Sportsmedicine" passed by the Connecticut Advisory School Health Council, May 1981.

for one school year at the secondary school and college levels.[1] Other parameters including severity of injury and availability of health care personnel were also described. Commenting on the report, Secretary Califano stated, "Many of the injuries the report documents might have been prevented if schools used safer equipment, if coaches and trainers were better trained in preventing as well as promptly treating injuries, and if the participants had been taught safety rules as well as rules of the game." This report was transmitted to the chief State School Officers in each state. In a recent survey of 21 high schools in the greater Hartford area, the two most common recommendations for improving health care in interscholastic sports were to add athletic trainers and to provide standard guidelines for sportsmedicine programs.[2]

The need for decreasing athletic injuries and improving sportsmedicine programs is well documented. Athletes should have safe playing conditions, safe equipment and effective injury prevention as well as effective recognition and treatment programs.

A well-planned program of sports and sportsmedicine should be designed to minimize the possibility of injury and maximize the quality of medical care if an injury occurs. The purposes of a sportsmedicine program are:

- To prevent injury by continually evaluating examination procedures, game rules, equipment, field conditions, practice and play, and officiating.
- To seek change where safety can be enhanced without changing the character of the sport.
- To recognize injury as quickly as possible and institute appropriate treatment.
- To rehabilitate adequately after an injury so that the athlete can return safely to play in the shortest time possible.

## Implementing A Sportsmedicine Program

After developing community support and school board approval for a sportsmedicine program, the program should be implemented in the school. Activities appropriate to implementing a program are as follows:

- Provide sufficient liability coverage.
- Provide inservice education for all school personnel involved with sports programs.
- Provide training programs for school personnel interested in becoming involved in a sportsmedicine program.[3]
- Provide an effective system of communication for medical personnel, school personnel, parents and students involved with sports programs.
- Provide the resources necessary for an effective program.
- Clarify roles and responsibilities for personnel involved in the program.
- Institute procedures for pre-participation assessment, injury prevention, early recognition and treatment of injury, and returning to play.

## Roles and Responsibilities for Program Personnel

The ultimate responsibility for a sportsmedicine program lies with the local Board of Education. The responsibility for program administration lies within the jurisdiction of the school superintendent. Other school personnel who play key roles in the implementation of the program include the school medical advisor, team physician, athletic trainer, school nurse, athletic director, and coaches of the athletic teams.

### The School Medical Advisor

The school medical advisor or school physician is responsible to the superintendent of schools and/or the local health department for the health assessment of the students in a particular school district. She/he is responsible for seeing that proper physical examinations are performed by a team physician or by the athletes' own physicians, and for determining the content of the physical examinations. A standard history-physical form should be used for examining athletes in the school program.[4]

It is also the responsibility of the school medical advisor to approve all medical personnel involved in the program; to develop with the help of school officials a plan for medical coverage of athletic games and practices; and to establish procedures to be followed in case of injury in any sports program. These procedures should be established long before practice or interscholastic competition begins.

### The Team Physician

The team physician is responsible to or may be the school medical advisor. She/he should have an active, ongoing interest in sportsmedicine. Finding a qualified physician often is not an easy task. Occasionally local medical societies can be helpful in securing such a person.

The team physician, in cooperation with the family doctor, should assume the sole responsibility for determining the fitness of a student to participate in interscholastic activities. The team physician should have the final authority in determining the physical and mental fitness of the athletes under his/her charge and in making definitive medical judgments regarding an athlete's participation in programs sponsored by the school. This authority must be understood by all personnel involved in the sports program, including the athletic trainer, emergency medical technicians, nurse, athletic director, coaches, school administrators, parents and students. Following illness or serious injury, the team physician has the final authority to determine whether or not the athlete may actively compete in programs sponsored by the school.

The team physician should be responsible for proper coverage by trained personnel at all sports contests and practice sessions. She/he should, in conjunction with the school medical advisor, school nurse, school administrators, athletic director, and coaches, develop and implement a system for emergency transportation, provide trained personnel at game sites and provide for care of injured athletes. She/he should have direct responsibility for supervision of the athletic trainer.

The team physician also should develop and carry out a plan for field responsibilities during games and practices.[5]

Although the team physician has the final authority regarding an athlete's participation in programs sponsored by the school, the athlete's family physician must be made to feel that she/he is an integral part of the medical team caring for the young athlete. She/he should be consulted and included in all decisionmaking so that there is a spirit of cooperation between private physician and team physician.

### The Athletic Trainer

The athletic trainer should work under the supervision and guidance of the team physician to help develop and maintain an optimal sportsmedicine program. The program should include methods for preventing injuries, early care of injuries and rehabilitation of injuries. The trainer should work in cooperation with emergency medical technicians to improve the overall medical coverage. She/he should establish and maintain quality training room facilities easily accessible to male and female athletes. Equipment and supplies should be provided to adequately meet the needs of the sports program.

The athletic trainer should be qualified for the position by having had appropriate training in sportsmedicine.

For those schools which can afford a full-time certified athletic trainer, one may be hired. For those which cannot afford an additional position, the following actions are suggested:

- Replace a retiring or resigning teacher with an individual qualified both in athletic training and the desired position.
- Recruit physical educators who have minored in athletic training as undergraduates.
- Send interested teachers already filling a position for post-graduate training in sportsmedicine. Persons such as the school nurse or biology teacher may express an interest and be available for training.

### The School Nurse

The school nurse should hold appropriate qualifications for the position. She/he should assist the school medical advisor and the team physician with specific aspects of the sportsmedicine program based on the needs of the ideal school district. Those with the interest and training may assume the duties of an athletic trainer.

### The Athletic Director

The athletic director is responsible for the overall administration of the athletic program including the safe conditions of facilities and equipment. She/he should help to coordinate the sportsmedicine program by making sure that all procedures and provisions for medical care are operational. The athletic director is responsible for insuring that the coaches understand all policies and procedures for preventing injuries, obtaining medical help, following an injured player and returning an athlete to play.

Working in cooperation with the team physician, the athletic director should see that appropriate medical coverage is provided before allowing an activity to proceed.

### The Coach

A coach's primary responsibility is for the well-being of the athletes during practice and play. She/he should be skilled in first aid and be able to effectively follow the procedures for medical emergencies.

Every attempt should be made to relieve the coach of the responsibility to provide direct sportsmedicine services. The coach should be free to coach; however, it is important for the coach to follow the school's policies and procedures for medical care. In the event of an injury, the circumstances surrounding the injury should be reported in detail. The coach should accept previously injured or ill players into practice or playing situations only after proper clearance.[4]

The coach is in a unique position to influence athletes. She/he should realize this and make every attempt to encourage athletes to make responsible decisions about their health and well-being.

### Conclusion

With the appropriate personnel carrying out good pre-participation assessments, checking interim histories, providing preventive help with equipment, fields, rules and officiating, recognizing problems early, and fully treating and rehabilitating injuries that do occur, an optimal program for the care of athletes can be established. Further information and details may be obtained from the resources listed following the *References* section.

### REFERENCES

1. Calvess, Roberts Jr: Athletic Injuries and Deaths in Secondary Schools and Colleges 1975-1976. US Department of Health, Education and Welfare and cover statement, Joseph A Califano Jr. February 25, 1979
2. Hartford County Medical Association, Community Health Committee Survey on Sports-Related Health Care. 1977
3. Cushing, D: NWU's Center; Training Trainers in the Windy City. The Physician and Sportsmedicine Volume 8, 151, February 1980
4. Sports-Oriented Assessment Forms including History, Physical Examination, Interim History, Report of Injury, and Return to Play available through Connecticut State Medical Society. For free copies write to: CSMS, 160 St Ronan Street, New Haven, CT 06511

5. The Team Physician, A Brochure for Team Preparing Coaches and Trainers, Connecticut State Medical Society

## RESOURCES

American Alliance for Health, Physical Education, Recreation and Dance
1900 Association Drive
Reston, VA. 22091
Telephone (703) 476-3400

American College of Sportsmedicine
1400 Monroe Street
Madison, Wisconsin 53706
Telephone (608) 262-3632

Connecticut Chapter of the
American Academy of Pediatrics
Thomas Dolan, M.D.
Yale-New Haven Hospital
789 Howard Avenue
New Haven, CT. 06519

Connecticut State Medical Society
Committee on Medical Aspects of Sports
160 St. Ronan Street
New Haven, CT 06511

National Athletic Trainers Association
3315 South Street
Lafayette, Indiana 47904

---

# Aerobic Muscular Exercise: Applications in Clinical Medicine for Diagnosis and Therapy

HERBERT H. SCHERZER, M.D.

**ABSTRACT**—The physiologic stress induced by aerobic muscular exercise can be utilized to detect and define a variety of clinical disorders. Occasionally, strenuous physical exercise will provoke overt clinical disease in apparently healthy individuals. Evaluating patients under exercise conditions has been employed enthusiastically in the assessment of myocardial disease. However, if performance parameters are appropriately selected, exercise testing can be valuable in the assessment of pulmonary, peripheral vascular and neuromuscular disorders. Exercise training can also be a useful component of comprehensive rehabilitation programs for these same disorders.

"Physical activity can be used as an important, quantifiable physiologic perturbation of the various systems of the human body. . . . a dose of physical exercise can be used as a controlled variable to study the response to a physiologic system"[1] Occasionally exercise will elicit serious disease symptoms in apparently healthy individuals. In disease-states the pattern of adaptation of the supporting organ systems and the factors limiting performance change. Alterations in this adaptive pattern can be studied to detect and define physiologic dysfunction caused by a disease process. Exercise testing can be useful both as a screening test to detect occult or clinically suspected disease and as a means to precisely define the dysfunction resulting from known disease. For diagnostic medical purposes, performance is generally less important than work capacity. Variables such as skill and strategy which are important in competitive athletic activities can be viewed as compensatory mechanisms in disease states. However, rehabilitation programs can utilize skill and strategy training to improve the ability of disabled individuals to perform necessary daily tasks. The clinician assesses the factors limiting work performance and/or pathologic findings elicited by exercise stress. Under certain circumstances, exercise conditions can be used to guide therapy and to assess the efficacy of therapeutic interventions.

Exercise programs are useful for cardiovascular, pulmonary, and neuromuscular rehabilitation[2-7]. The relative risk of cardiovascular disease can also be

---

HERBERT H. SCHERZER, M.D., Assistant Professor, Department of Medicine, University of Connecticut School of Medicine, Farmington, CT., Director, Pulmonary Division, New Britain General Hospital, New Britain, CT.

reduced for individuals who have clear evidence of cardiac pathology[8] by regular aerobic exercise. Preliminary reports suggest that at least some of this risk reduction is related to a reduced rate of atherogenesis, secondary to altered lipoprotein metabolism, analogous to the beneficial preventive effects observed in healthy populations.[9, 10] However, training effects that improve work capacity, even if the basic disease process is unaffected, may also be beneficial. This seems to be the major benefit of exercise training for patients with advanced pulmonary disease. Although there is no demonstrable improvement in lung function as assessed by standard spirometry and there is no experimental model which predicts a salutory effect on the underlying lung disease, work performance improves with exercise training.[7] Post-training improvements are evident in inspiratory muscle performance,[11 - 13] and probably occur in the regularly exercised skeletal muscles as well.

Patients with neuromuscular disturbances such as cerebral palsy, cerebrovascular accidents or skeletal deformities have significantly increased oxygen consumption with activities such as walking or transfers.[14] Although joint immobility and pain are important factors that can cause disability in arthritis patients, local muscle weakness secondary to disuse and "deconditioning" because of generalized inactivity represent significant problems. An exercise prescription for such individuals should address the need for both improved aerobic performance and the need for improved efficiency in the performance of specified tasks. The latter training is analogous to the skill and strategy drills and specific muscle group training of competitive athletes. The performance objectives of an exercise rehabilitation program must be realistic for each individual and the training program should be designed to develop an adequate level of aerobic fitness and satisfactory technique to accomplish these objectives.

## The Dangers of Exercise

Although routine exercise testing of young (less than 30 years old) individuals in not indicated, evaluation of young, apparently healthy athletes should be mandatory when family history or physical findings suggest that exercise may provoke an underlying disease process. Implicit in this statement is the need for a thorough general history and physical examination of all athletes prior to their initiation of strenuous training programs. A recent review by Maron[15] demonstrated that idiopathic hypertrophic subaortic stenosis (IHSS) was a frequent postmortem finding in young athletes who experienced sudden death. If the family history is positive; the screening physical examination detects a systolic murmur, particularly one which increases with maneuvers which decrease venous return (e.g. Valsalva maneuver) or maneuvers which decrease afterload (e.g. nitroglycerine); or the athlete complains of exertional chest pains; then an electrocardiogram and an echocardiogram should be obtained prior to permitting such an individual to undertake strenuous exercise. Severe valvular aortic or pulmonary aortic stenosis is associated with exercise-induced syncope.[16]

Exercise-induced asthma and urticaria may be an intermittent occurrence in an otherwise unaffected individual, [17, 18] requiring a provocative test (strenuous exercise that exceeds the anaerobic threshold or the inhalation of very cold air) to reproduce measurable abnormalities.[17]

Certain blood dyscrasias may be clinically silent until a combination of drugs and exercise, exercise under hypobaric conditions, or volume depletion and hyperthermia associated with exercise, precipitates a hematologic crisis. Individuals with a family history or ethnic or racial background that suggests an increased incidence of such disorders (sickle cell trait, G6PD-ase deficiency) should be screened with a CBC and differential count and, if the clinical index of suspicion is sufficiently high, hemoglobin electrophoresis. A rare, but interesting group of asymptomatic individuals with unilateral pulmonary artery agenesis have a high risk of developing "high altitude pulmonary edema".[19] Such individuals are characteristically asymptomatic and have a normal physical examination. However, a chest x-ray and radionucleotide ventilation-perfusion scan are pathognomonic.

## Cardiac Disease

Exercise testing to screen for ischemic myocardial disease and to monitor the medical and surgical therapies of coronary artery disease has been widely employed. "Stress testing" has become a term synonymous with an exercise evaluation of myocardial performance and electrophysiologic activity. Such testing has proved particularly useful in assessing the population who has been preselected on the basis of risk factors, history, and/or physical findings.[20 - 25] As a screening test for cardiac disease in low risk populations, exercise stress testing has been less effective.[25, 26] Nonetheless, since coronary artery disease is such a common disease and epidemiologic studies have identified the important risk factors, stress testing has become a very useful diagnostic procedure, particularly with the development of specific and effective medical and surgical therapies for malignant arrhythmias, angina pectoris, and coronary artery stenosis.

Both the sensitivity and specificity of the test for measuring myocardial ischemia has been improved by several approaches. One approach has been to improve the monitoring of the heart's surface electrical activity by using more leads, analyzing depolarization and repolarization by vectorcardiography, or by applying a matrix of electrodes to the chest wall.[27 - 29] Other approaches include echocardiography and nuclear medicine techniques. Ischemia can be assessed either by indirectly measuring lowered transmembrane potential ("cold spot imaging") or by imaging of the ventricular ejection fraction (radionucleotide angiography). "Cold spot imaging" using isotopes such as Thallium 201 or Rudidium-81 has been disappointing with little incremental improvement in either the sensitivity or the specificity of conventional cardiac stress exercise testing.[30] Radionucleotide left ventricular angiography utilizing either a first pass technique or a "gated" technique (imaging at intervals within the ECG cycle) has been employed to assess left ventricular ejection with reasonable accuracy compared with ventriculograms obtained at cardiac catheterization.[30-33] Such determinations are promising, because they allow serial assessment of myocardial function without resorting to repeated cardiac catheterization.

Although exercise testing is not routinely employed to evaluate peripheral vascular disease, it may prove to be valuable in defining the physiologic basis of a clinical symptom as the following case illustrates:

### Case # 1

I.S. is a 47-year-old woman who was evaluated in July 1979 because of the onset of syncopal episodes, anteceded by frequent episodes which generally occurred while she was working with her arms, during the previous 18 months. She had visited emergency rooms on several occasions, complaining of lightheadedness and an associated constellation of confusing symptoms including leg cramps, chest pains, and headache. She had been diagnosed as "hyperventilation syndrome." An angiogram performed 18 months previously to evaluate a left carotid bruit demonstrated 75% stenosis at the takeoff of the left subclavian artery. This study was not felt to demonstrate sufficient vascular compromise to explain her dizziness. A treadmill exercise test was also performed 18 months before. During the test the patient developed leg pain, followed by anxiety, dizziness, dyspnea, and retrosternal discomfort.

On physical examination the BP was 160/80 right arm and 130/100 left arm. A loud left subclavian bruit radiating to the left carotid was apparent. A repeat treadmill test elicited dizziness at a low workload (2 mph, HR 115). Her blood pressure was well maintained. A 20 mm gradient between left and right arm blood pressures was noted, but the lowest recorded BP was 120/84 (left arm). Arm exercise using a bicycle ergometer produced dizziness with left arm exercise, but not with right arm exercise. A repeat angiogram demonstrated 95% obstruction at the origin of the left subclavian artery. The patient was referred for corrective vascular surgery (left common carotid to subclavian artery bypass graft) with complete alleviation of her dizziness and the associated symptoms. Repeat arm ergometry performed four months postoperatively did not elicit the dizziness.

### Comment

This patient has clear evidence of peripheral vascular disease, but her complaints were confusing and her inital evaluation was inconclusive. Standard exercise testing did not clarify the pathophysiology of her syncopal episodes, but specific exercise did.

Serial stress testing has been widely used to monitor efficacy of therapy and to allow physicians to "prescribe" specific "doses" of muscular exercise for individuals with known cardiac disease. Regular aerobic exercise has become as important part of comprehensive cardiac rehabilitation programs for both post myocardial infarction patients and post coronary bypass graft patients. There is increasing evidence that both the survival and the quality of life of most patients who engage in such graded exercise programs is significantly improved[4, 5, 8]

### Pulmonary

Although exertional dyspnea is a common symptom, work performance is not limited by ventilation or gas diffusion for normal individuals except under hypobaric or hyperbaric conditions. Furthermore, training effects achieve only modest improvements in maximum ventilation (by improving ventilatory muscle performance) and no significant effect on the lung as an organ for gas exchange. Exercise stress testing, therefore, has more limited indications in the evaluation of pulmonary diseases. It can be helpful as a provocative test to elicit airflow obstruction in patients suffering from exercise induced asthma, as the following case illustrates:

### Case # 2

J.O. is a 57-year-old woman with a ten-year history of chest pain and dyspnea. The patient had a history of bronchial asthma since childhood but was comfortable at rest with clear lung fields to auscultation. Chest pain occurred after the onset of exertional dyspnea and after meals. She was noted to have a midsystolic click and a midsystolic murmur, but an echocardiogram did not confirm mitral valve prolapse. A coronary angiogram was performed in 1974 and was normal. The chest pain usually responded to sublingual NTG. An arterial blood gas obtained at rest on ambient air was normal except for an increased alveoloarterial oxygen gradient ($PaO_2$ 65 mmHg). During a cardiac "stress" exercise test the patient was forced to stop due to dyspnea while walking at 3½ mph up a 10% grade. At that time she had audible wheezing and severely reduced airflows (FVC 1L, 40% predicted, and FEV 1 0.6L, 19% predicted). There was no evidence of ischemia or of ventricular ectopy on the ECG tracings. The following day, the same exercise test was repeated, but the patient was "pretreated" with metered dose metaproterenol followed by inhaled cromolyn sodium. Her pre-exercise FVC was 2.5L, 97% predicted, and FEV 1 was 1.46L, 60% predicted. She repeated the test without exertional dyspnea or chest pain. Arterial saturation was monitored by ear oximetry and ranged between 91 and 95% during the test. Post-exercise airflows were unchanged. Subsequently, esophageal manometry demonstrated esophageal dysmotility with disordered peristalsis and episodic spasm associated with chest pain.

### Comment

This woman carried the erroneous diagnosis of angina pectoris for six years. Monitoring appropriate physiologic parameters during an exercise evaluation clarified the etiology of her dyspnea (exercise induced bronchospasm) and allowed reevaluation of her chest pain, leading to the appropriate diagnosis.

Patients with pulmonary vascular disease due to injury and destruction of the alveolo-interstitium can be evaluated by exercise stress. In order to obtain maximal useful information from such testing the clinician must anticipate the nature of the suspected abnormalities and monitor appropriate parameters. For example, patients with suspected pulmonary vascular disease should have pulmonary artery pressures monitored:

### Case # 3

H.S. is a 57-year-old woman with Sarcoidosis who was seen in April 1980 because of insidiously progressive exertional dyspnea over the past three years associated with dull, nonradiating substantial chest pain and the appearance of new systolic murmurs during the past year. The murmurs increased during respiration. They were best heard over the anterior chest wall and radiated laterally and posteriorly around both hemithoraces. The lung fields were, otherwise, clear to auscultation. Serial spirometry and single breath carbon monoxide diffusing capacity (81% predicted) determinations were stable over a ten-year period and demonstrated a moderate combined restrictive and obstructive defeat. Progressive upper lobe retraction was evident on serial chest radiographs. An ABG at rest on ambient air was obtained: pH 7.47, $PaCO_2$ 38 mmHg, oxygen saturation 96%, Hb 15.6 gm%. Gallium scanning, ACE and serum lysozyme levels all suggested active Sarcoidosis. An exercise evaluation was performed monitoring oxygen consumption, arterial oxygen saturation, cardiac output, and pulmonary artery pressures (via a thermodilution Swan-Ganz catheter). She was exercised on a bicycle ergometer to a maximum level of 125 watts. At rest, her cardiac output was 3.9 L/min, and her mean pulmonary artery pressure was 27 mmHg. There was no pressure gradient across the pulmonic valve. Pulmonary capillary wedge pressures were low (5 mmHg). At maximal exercise, she developed dyspnea and nonradiating substernal chest pain. Arterial saturation was maintained at greater than 95% throughout the test, but mean pulmonary artery pressure rose to 50 mmHg. No ECG abnormalities were noted and her blood pressure was well maintained.

### Comment

This study demonstrates the value of more comprehensive exercise stress monitoring of carefully selected patients. The impairment of ventilatory reserve and the reduction in diffusing capacity did not appear adequate to explain the exertional dyspnea. Under exercise conditions, the patient developed severe pulmonary hypertension which was correlated with the development of dyspnea and chest pains.

The partial pressure of arterial oxygen or oxygen saturation should be continually monitored in all patients suspected of having an abnormal gas transfer (or "diffusing capacity") with exercise. A common error is to assume that a post-exercise arterial blood gas sample will accurately reflect oxygenation during exercise. While some individuals with severe airflow obstruction remain hypoxemic for one to two minutes after ceasing exercise, most individuals with restrictive disease (e.g. pulmonary fibrosis) remain hypoxic only during exercise and for a few seconds thereafter. Until recently, the only way to continually monitor arterial oxygen levels was with intra-arterial lines, but with the advent of transcutaneous monitors of arterial oxygen saturation or oxygen partial pressure, such evaluations can be readily performed without patient discomfort. The development of impedence plethysmography offers promise as a technique for monitoring ventilation, without the artifact induced by breathing into a mouthpiece,[34] although this technique is unsatisfactory for patients with significant chest wall deformities or chronic obstructive pulmonary diseases.

### Evaluating Patients with Dyspnea

Patients who complain of dyspnea but do not have historical risk factors, signs, or symptoms that strongly lead the clinican to suspect impairment of a specific organ system prior to testing represent a difficult problem. An exercise evaluation can be helpful, provided the workload is clearly defined. Monitoring must be sufficiently broad to assess cardiac, pulmonary, and working muscle performance. Measurement of minute ventilation, oxygen consumption ($VO_2$), carbon dioxide production ($VCO_2$) and venous lactate, in addition to ECG, blood pressure, heart rate, and ear oximetry will give a thorough profile of an individual's adaption to exercise.

Such testing is ralatively noninvasive and entails minimal risk. Surprisingly, most patients who complain of dyspnea on exertion are found to be poorly trained with dyspnea occurring at low workloads and with heart rate approaching the predicted maximum and associated with an elevated venous lactate level. An astute clinician will be alert to an abnormal response pattern that may suggest overt organic disease. Malingering or hysterical patients may have tachycardia and/or hyperventilation at rest or with minimal exertion and complain of dizziness. Assuming a careful physical examination has preceded the exercise test, and the resting ECG and spirometry are normal, exercise syncope in the absence of measurable hypotension is usually of supratentorial origin, with important exceptions such as in Case # 1. Other individuals may reach a very high oxygen consumption without demonstrating evidence of cardiac or pulmonary disease.

Any physician who uses exercise stress as a diagnostic test must have the equipment and expertise to undertake cardiopulmonary resuscitation in the event of a cardiac arrest and a plan to transfer patients to an appropriate inpatient facility if life-threatening cardiac arrhythmias do occur.

### Conclusion

Applying his knowledge of normal physiology and pathophysiology of specific diseases, the clinician can work performance to better define and monitor disease processes and to foster improvement in the functional capacity of afflicted individuals. This review has surveyed current applications of performance testing and discussed their value. Selected case studies emphasize the value of thoroughly understanding normal physiologic adjustments to exercise rather than relying on "cookbook" protocols. Some individuals with unsuspected health disorders may become seriously ill for the first time under the stress imposed by strenuous recreational or competitive exercise conditions. Such individuals are best detected before serious injury occurs. Finally, individuals with disability or overt disease can benefit from exercise training, particularly if such training is part of a comprehensive rehabilitation program.

### Acknowledgement

The author wishes to thank Dr. Charles Leach and Dr. Murray Dunn for their permission to publish Case # 2.

## REFERENCES

1. Mitchell JH: Regulation in Physiological Systems During Exercise. Federation Proceedings 39:1479-1513, 1980
2. Cress RH: Rehabilitation Exercises for Home-Bound Patients. Guide to Fitness After Fifty. Harris R and Frankel LJ. Plenum Press, New York, 1977
3. Alvik I: Physical Training of Disabled Persons and Exercise Problems in Rehabilitation and Convalescence. Part III in Physical Activity in Health and Disease. Evang K and Andersen KL. Williams and Wilkins Co, Maryland, 1966
4. American Heart Association, Committee on Exercise: Exercise Testing and Training of Individuals with Heart Disease or at High Risk for its Development. A Handbook for Physicians, 1975
5. Levenson RM, Maxon M, Altom BL: Alternatives in Cardiac Care. Prevention and Rehabilitation Conference. American Heart Association, 1979
6. Shephard RJ: Physical Activity and Aging. Yearbook Medical Publishers, Inc. 1978
7. Bass H, Whitcomb JF: Exercise Training: Therapy for Patients With Chronic Obstructive Pulmonary Disease. Chest 57:116-121, 1970
8. Shephard RJ, Corey P and Kavanagh T: Exercise Compliance and the Prevention of a Recurrence of Myocardial Infarction. Medicine and Science in Sports and Exercise 13:1-5, 1981
9. Hartung GH, Squires WG, and Gotto AM: Effect of Exercise Training on Plasma High-Density Lipoprotein Cholesterol in Coronary Disease Patients. American Heart Journal 101:181-184, 1981
10. Hartung GH, Foreyt JP, Mitchell RE, Vlasek I, and Gotto AM: Relation of Diet to High-Density-Lipoprotein Cholesterol in Middle-aged Marathon Runners, Joggers, and Inactive Men. N Engl J Med 302:357-361, 1980
11. Derenne J, Macklem PT, and Roussos C: The Respiratory Muscles: Mechanics, Control, and Pathophysiology, Part III, 289-309, Lung Disease, State of the Art, 1977-1978, American Lung Association
12. Mungall IPF and Hainsworth R: An Objective Assessment of the Value of Exercise Training to Patients with Chronic Obstructive Airways Disease. Quarterly Journal of Medicine 49:77-85, 1980
13. Pardy RL, Rivington RN, Despas PJ, and Macklem PT: Inspiratory Muscle Training Compared with Physiotherapy in Patients with Chronic Airflow Limitation. American Review of Respiratory Disease 123:421-425, 1981
14. Eriksson BO: The Child in Sport and Physical Activity - Medical Aspects in Child in Sport and Physical Activity. Albinson JG and Andrew GM, ed. University Park Press, Baltimore, MD 1976
15. Maron BJ, Roberts WC, McAllister HA, Rosing DR, and Epstein S: Sudden Death in Young Athletes. Circulation 62:218-229, 1980
16. Fletcher GF: The Dangers of Exercise, Up Date 5-The Heart. J Wilson Hurst, ed. McGraw Hill Publishing Company, 1981
17. McFadden ER, and Ingram RH: Exercise-Induced Asthma. Seminars in Medicine of the Beth Israel Hospital, Boston. N Engl J Med 301:763-769, 1979
18. Soter NA, Wasserman ST, Austen KF, and McFaddin ER: Release of Mast Cell Mediators and Alterations in Lung Function in Patients with Cholinergic Urticaria
19. Hackett PH, Creagh CE, Grover RF, Honigman B, Houston CS, Reeves JT, Sophocles AM, and Hardenbroek M: High-Altitude Pulmonary Edema in Persons without the Right Pulmonary Artery. N Eng J Med 302:1070-1071, 1980
20. Fisher LD, Kennedy JW, Chaitman BR, Ryan TJ, McCabe C, Weiner D, Tristani F, Schloss M, and Warner HR: Diagnostic Quantification of CASS (Coronary Artery Surgery Study) Clinical and Exercise Test Results in Determining Presence and Extent of Coronary Artery Disease, A Multivariate Approach. Circulation 63:987-1000, 1981
21. Stiles GL, Roasati RA, Wallace AG: Clinical Relevance of Exercise-Induced S-T Segment Elevation. The American Journal of Cardiology 46:931-936, 1980
22. Starling MR, Crawford MH, Kennedy GT, and O'Rourke RA: Exercise Testing Early After Myocardial Infarction: Predictive Value for Subsequent Unstable Angina and Death. The American Journal of Cardiology 46:909-914, 1980
23. Blackburn H (ed): The Ernst Simonson Conference: Measurement in Exercise Electrocardiography. Charles C. Thomas, Springfield, Illinois 1969
24. Moss AJ: Clinical Significance of Ventricular Arrhythmias in Patients with and without Coronary Artery Disease. Progress in Cardiovascular Diseases 23:33-52, 1980
25. Barrett PA, Peter CT, Swan HJC, Singh BN, and Mandel WJ: The Frequency and Prognostic Significance of Electrocardiographic Abnormalities in Clinically Normal Individuals. Progress in Cardiovascular Diseases 23:299-319, 1981
26. Weiner DA, Ryan TJ, McCabe CH, Kennedy JW, Schloss M, Tristani F, Chaitman BR and Fisher LD: Exercise Stress Testing, Correlations Among History of Angina ST-Segment Response and Prevalence of Coronary-Artery Disease in the Coronary Artery Surgery Study. N Engl J Med 301:230-235, 1979
27. Simmons ML, Hugenholtz PG, Ascoop CA, Distelbrink CA, DeLand PA, and Vinke RVM: Quantitation of Exercise Electrocardiography. Circulation 63:471-475, 1981
28. Hollenberg M, Budge WR, Wisneski JA, and Gertz EW: Treadmill Score Quantifies Electrocardiographic Response to Exercise and Improves Test Accuracy and Reproducibility Circulation 61:276-285, 1980.
29. Bethesda Conference—Keynote Addresses. The American Journal of Cardiology 47:720-776, 1981
30. Johnstone DE, Sands MJ, Berger HJ, Reduto LA, Lachman AS, Wachers FJT, Cohen LS, Gottschalk A, Zaret BL: Comparison of Exercise Radionuclide Angiocardiography and Thallium-201 Myocardial Perfusion Imaging in Coronary Artery Disease. The American Journal of Cardiology 45:1113-1119, 1980
31. Becker LC: Diagnosis of Coronary Artery Disease with Exercise Radionuclide Imaging: State of the Art. The American Journal of Cardiology 45:1301-1304, 1980
32. Dehmer GJ, Lewis SE, Hillis LD, Corbett J, Parkey RW, and Wilkerson JT: Exercise-Induced Alterations in Left Ventricular Dysfunction in Patients with Coronary Artery Disease. Circulation 63:1008-1018, 1981
33. Weiner DA, McCabe CH, Roth RL, Cutler SS, Berger RL, and Ryan TJ: Serial Exercise Testing After Coronary Artery Bypass Surgery. American Heart Journal 101:149-154, 1981
34. Sackner JD, Nixon AJ, Davis B. Atkins, and Sackner M: Effects of Breathing Through External Dead Space on Ventilation at Rest and During Exercise. Chapter II in The American Review of Respiratory Disease 122:933-940, December 1980

# Hypothermia in Winter and High Altitude Sports

WALTER R. HAMPTON, M.D.

**ABSTRACT**—Hypothermia, defined as a core temperature of less than 95°F/35°C, occurs when factors contributing to heat loss exceed mechanisms of heat production. Conduction, convection, radiation, evaporation, and respiration are the principal causes of heat loss, and are influenced by intrinsic and extrinsic factors. Metabolic processes of heat production as well as exercise capability and shivering can be impaired by disease processes and nutritional status. The pathophysiological consequences of hypothermia involve the cardiovascular, respiratory neuromuscular systems, and are associated with metabolic and respiratory acidosis. The manifestations of altitude sickness further complicate associated hypothermia. Rewarming methods in the field and in the hospital setting will prevent further heat loss, while protecting the irritable myocardium. Peritoneal dialysis is probably the most practical method of active internal rewarming.

In his dramatic account of the first ascent and difficult retreat from the summit of Annapurna, Maurice Herzog provides an eloquent description of men pushing to the limits of their abilities while suffering from hypothermia, high altitude sickness, and cold injuries.[1] The present day popularity of winter sports and mountain climbing, the technological ability to be rapidly transported to remote locations and/or high altitude, and an unfamiliarity with the hazards of cold and altitude has made these hazards an increasingly serious problem. The risk is not confined to those seeking high adventure. The casual winter hiker and recreational skier are as prone to the risk of cold injury as those seeking more remote high adventure. Injuries occurring as a result of winter sports activities are almost always associated with some degree of hypothermia. In addition, the spiraling cost of energy has caused many dwellings to be inadequately heated, exposing susceptible individuals - the elderly and chronically ill - to the risks of hypothermia in their own homes. It is therefore prudent for the practicing physician to be familiar with the current concepts of this preventable and treatable disorder.

## Thermoregulation

Man is a homotherm and is able to perform well only in a narrowly defined temperature range. Thermoregulation is a complex physiologic process involving the integrations of functions of the hypothalamic center of the central nervous system and the autonomic nervous system, with the circulatory system, musculoskeletal system, and endocrine influences. Body temperature is maintained by a balance of the factors contributing to heat production and maintenance on one hand, and heat loss on the other. Hypothermia is defined as a core temperature of less than 95F/35C.[2]

Heat production is a function of general body metabolism and muscular activity. Voluntary exercise results in heat production proportionate to the intensity of the effort but is limited by fatigue. Shivering is involuntary muscular activity invoked to compensate for excessive heat loss, and can generate up to 450 Cal/hr.[3] Inactivity from any cause, presence of disease states such as hypothyroidism, adrenal insufficiency, general debilitation and aging may impair heat production.[4] Adequate caloric intake and maintenance of fluid balance are important in maintaining thermoequilibrium.

Cold exposure stimulates cutaneous thermoreceptors and results in peripheral vasoconstriction in an attempt to conserve the core temperature.[5] Despite this and other protective mechanisms, heat loss can occur through five mechanisms: 1) Conductive losses occur

---

WALTER R. HAMPTON, M.D., Assistant Clinical Professor of Medicine, University of Connecticut School of Medicine, Farmington, CT; Medical Director, McLean Home, Simsbury, CT and Faculty Member, Mountain Medicine Incorporated, Worcester, MA.

by direct contact with cold surfaces as in sitting on snow or ice, or contact with cold equipment such as ice axes or crampons. 2) Wetness whether by cold water emersion or wet clothing can increase conductive losses up to 25 to 30 times. 3) Convection is the loss of heat by particulate transfer and is chiefly manifest by the familiar wind chill factor. 4) Radiation of heat can be a significant loss of heat particularly from the uncovered head where up to 50% of the body's heat can be lost due to the inability of the scalp vessels to constrict. The evaporation of moisture from the body is accompanied by loss of heat. 5) Finally, air is warmed and humidified during normal respiration and heat loss can be significant when breathing heavily in a cold, dry environment.

The rate of heat loss by the above mechanisms is influenced by factors such as temperature differential, wind velocity, exposure to moisture, altitude, nutritional status, and adequacy of hydration. Fatigue, stress and the presence of injury are also important. Concurrent disease and the use of alcohol and certain medications play significant roles. When the multiple factors contributing to heat loss exceed those of heat production, hypothermia will occur. Acute hypothermia results from rapid cooling and is most commonly due to cold water immersion.[6] Chronic hypothermia is seen in situations of drug and alcohol overdose, endocrinopathies, chronic illness, and prolonged exposure to a cold environment. The victim of a winter sports mishap usually presents with sub-acute hypothermia, the clinical manifestations reflecting the variable cooling rates of the exposure-incident.[7]

## Pathophysiology

Proper recognition and mangement of hypothermia in the field and in the hospital is predicated on an understanding of the pathophysiology of the organ systems involved.

### Cardiovascular:

As core temperature drops, an initial increase in blood pressure is followed by progressive bradycardia, decreased cardiac output, and hypotension, despite maximal peripheral vasoconstriction.[8] The electrocardiogram may demonstrate the pathognomic "J" or Osborne wave.[9] Myocardial irritability increases, and at core temperatures below 30°C (86°F) there is increased risk of arrhythmias, especially atrial fibrillation, ventricular fibrillation and cardiac standstill. Once initiated, the arrythmias are virtually impossible to revert until significant re-warming of the heart has been achieved.[10]

### Respiratory:

The respiratory rate is initially increased followed by diminished rate and depth of breathing. Cold-induced bronchorrhea and a decreased cough reflex lead to airway obstruction. Hypoxemia and carbon dioxide retention occur. The oxyhemoglobin dissociation curve is shifted to the left, but the effect of this is offset somewhat by decreased tissue oxygen requirements. In extreme hypothermia, respiratory arrest may occur due to depression of medullary centers.[11]

### Neuromuscular:

The central nervous system shares in the slowdown of metabolic processes with decreased cerebral blood flow and impaired mentation and altered states of consciousness. Below 30°C, the pupils may be fixed and dilated and peripheral reflexes absent.[12]

The violent shivering of early hypothermia is replaced by muscular rigidity in more advanced states as muscle glycogen stores are depleted.

### Metabolic:

As cooling occurs, there is a significant fall in basal metabolic rate and may reach 50% of normal at 28°C. Acidosis is present and reflects the effects of $CO_2$ retention, hypoxemia, circulatory insufficiency, and accumulation of lactic and other organic acids. In interpreting pH and arterial blood gas determinations and arterial blood gas measurements, it is important to correct for the observed body temperature.[13] Dehydration is usually present and is complicated by cold-induced diuresis. The initial peripheral vasoconstriction in cold exposure is interpreted as volume excess with resultant decreased ADH secretion and decreased tubular sodium and water resorption.[14] Hyperkalemia may be significant and will complicate management in the re-warming period.

Abnormalities of blood sugar reflect the rate and duration of cooling. Despite the inhibition of insulin release and impaired peripheral utilization of glucose in profound hypothermia,[15] hypoglycemia is usually observed in the winter sports victim due to utilization of glycogen and glucose stores with intense shivering.[16] Hyperglycemia is more frequently noted in acute immersion hypothermia.[17]

Other metabolic affects include depression of liver function,[18] impaired gastrointestinal mobility, increased hematocrit and reduced leukocyte and platelet counts.

## Clinical Manifestations

The initial symptoms of hypothermia may be subtle and unrecognized by the victim or his associates. Depending upon circumstances, a person may progress from apparent robust health to a profound life threatening situation in a matter of hours. A sensation of chilliness, the initiation of shivering and minor impairment in performance may signal the onset. Unless corrective steps are taken, further drop of core temperature will lead to progressive fatigue and weakness, impaired coordination and judgment, and slurred speech. Violent shivering to the extent of impairing one's ability to perform self help, gives way to muscular rigidity, inability to walk or stand and collapse.[19] Unconsciousness usually supervenes at a temperature of 85°F[3] and as core temperature drops further, the patient may appear dead - cold, rigid, dilated fixed pupils and undetectable evidence of pulse or respiration. At this point, attempts at re-warming in the field are ineffective and indeed contraindicated. However, since patients have been successfully resuscitated at core temperatures of 64°F with flat EKG's, attempts at rewarming and resuscitation of all hypothermia victims should be attempted. The dictum to be remembered is "no one is dead until he is warm and dead."[20]

### High Altitude Considerations

Many outdoor enthusiasts seek the mountains for their recreational ventures. Climbers, ski mountaineers, adventure runners, helicopter skiers may achieve rapid ascent to high altitude (3000 meters, 10,000 feet) and be prone to the various manifestations of acute mountain sickness (AMS), high altitude pulmonary edema (HAPE), high altitude cerebral edema (HACE). These several forms of altitude sickness vary in rate of onset and mode of presentation depending upon rate and method of ascent, the altitude reached, and the presence of dehydration and hypothermia.[21]

The symptoms of each syndrome overlap and include headache, insomnia, mental aberrations, loss of coordination, weakness, anorexia, nausea, vomiting and respiratory difficulties. At high altitude, a proportionally greater amount of heat is lost from the lungs during the process of warming and humidifying the cold dry air.[22] The presence of varying degrees of hypothermia will obviously complicate high altitude illness and vice versa. It is postulated that the hypoxia common to all forms of mountain sickness interferes with the ATP/ Oxygen dependent "sodium pump." Intracellular sodium retention and osmotic swelling occur, and symptoms develop depending upon the location and amount of swelling of the cells involved.[23, 24]

The only definitive treatment of altitude sickness is immediate descent to a lower altitude. It may be prevented by an ascent slow enough to achieve adequate acclimatization. The degree of physical fitness is no protection against altitude sickness. Acetazolamide (Diamox) taken before going to altitude may prevent symptoms of acute mountain sickness without impairing the subsequent physiologic adjustment to high altitude.

### Management

As with many problems in clinical medicine, the best management is prevention. Those persons engaging in outdoor sports should be aware of the risks of hypothermia and the principles of safe operations in a cold environment. Adequate clothing, including footwear and head gear, to meet the most extreme conditions anticipated are important. Spare socks, mittens, and hats should be carried. The need for food, water and shelter, and fire-making should be anticipated. A thermos of hot, sweet liquid should be carried in the pack. Every effort should be made to stay dry; clothing should be layered allowing adequate ventilation and preventing excessive perspiration. A preventive windshield garment should be available. The use of "extra-dry" deodorant products on the feet for several days prior to a winter outing may help prevent excessive sweating of the feet and consequent frostbite.

### Field Management

The early field management of mild hypothermia is an extension of the principles of prevention. At the first sign of trouble, the party should stop and seek shelter. Protection from wind and wetness to prevent further heat loss is essential since it has been postulated that the rate of body cooling in man may proceed more rapidly beyond a temperature of 91.5°F, though the environmental condition may be constant.[25] Cold, wet clothing should be replaced with dry garments and the victim placed in a dry sleeping bag. External heat in any form, such as hot sweet liquids, heated rocks, heated canteens, etc. should be applied. The concept of stripping the victim and placing him or her in a sleeping bag with another warm naked body, though dramatic, is not a good method of heat transfer and should be discouraged.[26] Once these have been accomplished, mild exercise may be helpful in mild hypothermia. However, in more severe cases, and in the presence of exhaustion or immersion hypothermia, exercise is contraindicated.

Once the victim is poorly responsive or unconscious, the management is more difficult and somewhat controversial. Prognosis is poor, and the initial treatment may well dictate the outcome.[27] Above all, the person should not be considered dead until attempts at rewarming in the proper (hospital) setting have been proven unsuccessful. In the field, steps to assure no further heat loss and protection from the environment are paramount. The victim should be handled extremely gently at all times, remembering that the cold myocardium is irritable and may be precipitated into ventricular fibrillation even with gentle mechanical manipulation. For this reason other than assuring that the airway is clear, CPR should probably not be attempted in a hypothermic victim in the field.[4] Even nasopharyngeal intubation may be enough to precipitate an arrythmia. If CPR has been instituted, it must be maintained until such time that the heart has been warmed to the point that electrical defibrillation and medications become effective.

### Hospital Management

Once at a medical facility, the continued gentle handling of the patient is essential while general supportive procedures and specific rewarming methods are applied. Low-reading clinical thermometers should be available and core rectal temperature is monitored as treatment continues. The patient should be admitted to the intensive care unit and laboratory studies, including CBC, creatinine, BUN, electrolytes, blood gases, blood sugar and coagulation studies are obtained. Continuous electrocardiographic monitoring is essential. Intravenous lines should be secured, but caution exercises on the use of drugs; most are ineffective and contraindicated in the early phases of management due to the inability of the liver to metabolize them. CVP lines should be inserted cautiously with the catheter tip not entering the heart until warming has progressed to avoid myocardial stimulation. Central venous pressure should be maintained by volume expanders at a level of 5-10 cm. Sodium bicarbonate is used to correct acidosis, with care being taken to avoid overcorrection. Respiratory care with mechanical ventilation and careful intubation is required in most instances. As rewarming occurs, the cardiac irregularities will frequently convert to normal sinus rhythm without specific intervention. At most, Lidocaine boluses of 1.5 mgs/kg will suffice. Cardioversion if indicated will succeed only when the heart is adequately warmed. Intracardiac pacemakers are not necessary and may indeed irritate the myocardium. Cardiac standstill or ventricular fibrillation will of course have to be managed by CPR until adequate warming of the blood occurs.[16]

## Rewarming Methods

There is considerable controversy over the use of specific rewarming methods in the severely hypothermic patient. External methods may be entirely passive, such as removal from the environment and the addition of blankets. Active external rewarming techniques include total body immersion in tanks of water continuously heated to 105-110°F and the use of heated blankets and garments. These procedures, although simple to apply, may be complicated by "rewarming shock" and "after drop" due to peripheral vasodilitation superimposed on volume depletion and the return of cold, acidotic blood to the irritable myocardium in the core. However, with careful supportive measures, external rewarming may be used in mild hypothermia or acute immersion situations.

Active internal rewarming techniques may be more physiologic in chronic and subacute hypothermia. Methods proposed have included intragastric balloon, colonic lavage, cardiopulmonary bypass and hemodialysis. The inhalation of warmed, humidified oxygen has been advocated by Lloyd and Hayward and was found to produce less rewarming shock than external methods.[22]

The author favors the use of peritoneal dialysis as probably the most practical method for rewarming because of its ready availability in most hospitals, relative ease of application, and familiarity with the technique.[28] Reuler recommends warming two liters of potassium-free dialysate in a water bath maintained at 54°C yielding a solution of 43.5°C entering the peritoneal cavity. The exchanges are instilled rapidly and immediately withdrawn. Six to eight exchanges are usually adequate to provide significant core rewarming.[29]

## REFERENCES

1. Herzog, Maurice: Annapurna. E.P. Dutton & Co., Inc. 1952
2. Reuler, James B: Hypothermia Annals of Internal Medicine. Vol. 89, p. 519, 1978
3. NSPS: Ski Mountaineering Manual. p. 18, 1980
4. Kreider MD: Hypothermia: Latest Findings, Newest Treatments, Appalachia 171, 18, Dec 1980
5. Blair E: Clinical Hypothermia. New York, McGraw Hill Book Co 1964
6. Behnke AR, Yagou CP: Physiologic Response to Men to Chilling in Ice Water. J Appl Physiol 3:591, 1950
7. Hamblett MP: Resuscitation of Accidental Hypothermia Victims. United States Army Medical Research and Development Command Report No. T42-76, June 1976
8. Berne RM: Myocardial Function in Severe Hypothermia. Circ. Res. 2, 90, 1954
9. Trevino A, et al: The Characteristic Electrocardiogram of Accidental Hypothermia. Arch Intern Med 127, 470, 1971
10. Mouritzen CV, Andersen MN: Myocardial Temperature Gradients & Ventricular Fibrillation During Hypothermia. J Thoracic Cardiovasc. Surg 49, 937, 1969
11. Black PR, et al: Effects of Hypothermia on Systemic & Organ Metabolism & Function. J Surg Res 20, 49-63, 1976
12. Ehrmantraut WR, et al: Cerebral Hemodynamic & Metabolism in Accidental Hypothermia. Arch Intern Med 99, 57, 1957
13. Kelman GR, Nunn JF: Nomograms For Correction of Blood $PO_2$, $PCO_2$, pH & Blood Excess For Time & Temperature. J Appl Physiol 21, 1484, 1966
14. Harari H et al: Haemodynamic Study of Prolonged Drop Accidental Hypothermia. Eur J Intensive Care Mod 1, 65, 1979
15. Curry DL, Curry KP: Hypothermia & Insulin Secretion. Endocrinology 87, 750, 1977
16. Hamlet MP: Resuscitation of Accidental Hypothermia Victims. International Hypothermia Conference, U Rhode Island, 1980
17. TB Med 81: Department of the Army Technical Bulletin, Department of the Navy Publication, Department of Air Force Pamphlet, Cold Injury. 30 September 1976
18. Blair E: Clinical Hypothermia. New York McGraw Hill Book Co 1964
19. Wilkerson JA: Medicine for Mountaineering. The Mountaineers p. 153, 1978
20. Gregory RT, Patton JF: Treatment After Exposure To Cold. Lancet 1:337, 1972
21. Hacket H: Mountain Sickness. American Alpine Club 1980
22. Lloyd LL: Airway Rewarming As A Method of Treatment For Accidental Hypothermia. Int Hypothermia Con 1980
23. Houston C: High Altitude Illness, JAMA 236:2195, 1976
24. Houston C: Going High. American Alpine Club 1980
25. Alexander L: The Treatment of Shock From Prolonged Exposure to Cold. Report 250 US Department of Commerce (Dachau Experiments) (1945)
26. Hamlet MP: Mountain Medicine Symposium. November, 1980
27. Harnett RM, et al: A Study of Immersion Hypothermia. Int Hypothermia Conf, U Rhode Island 1980
28. Reuler James B: Peritoneal Dialysis and The Management of Hypothermia. JAMA Vol 240, No 21, p. 2289, November 17, 1978
29. Welton David E, et al: Treatment of Profound Hypothermia. JAMA Vol 240, No 21, p 2291. November 17, 1978

# Drugs and Sport

RICHARD J. MANGI, M.D., AND PETER JOKL, M.D.

"We will see which are better, his steroids or mine," said an American weight lifter prior to the Munich Olympics. "I need a better doctor," complained Frank Shorter after finishing a disappointing second in the Olympic marathon. These widely reported statements illustrate drug abuse in sport. Almost every world-class athlete, and many of lesser ability, has tried drugs to improve performance on the playing field.

Drugs represent the worst in sports, the 'win-at-all-cost' mentality. The problem is age-old. Ancient Greeks tried drugs to spark performance in the third century B.C. Olympiads. With each advance in pharmacologic science, this unsavory tradition has been refined and propagated.

The current boom in athletic drug use can be traced back to bicycle races for prize money in late nintenth century Europe. It was during one of these races that an English cyclist earned the dubious honor of becoming the first documentated sports fatality from drugs, an overdose of trimethyl. The word 'doping' came into common usage at that time, referring originally to a mixture of opium and other narcotics used on race horses. The root of the word stems not, as one might expect from the mentality of the user, but rather from 'dop,' a strong stimulant liquor used during religious ceremonies by the Kafir tribe of South Africa.

During the twentieth century, sports and athletes have been revered far beyond their true value in society. Professional athletes are idolized, knighted, overpayed, courted by heads of state, and put under enormous pressure to perform well. They are, of course, imitated by youngsters in little league, high school and college. Joe Namath needs a new knee because he played football with a knee numb from Xylocaine. Frank Shorter whines about blood-doping on national television. Dozens of professional basketball and football players use amphetamines and cocaine. It is not surprising that teenage athletes too are experimenting with drugs to improve their performance.

Given this unhealthy climate, a physician is hard-pressed to dissuade a young athlete from 'pharmacologic aids.' Categorical condemnation is not adequate, especially in the face of peer recommendation, pressure from trainers and coaches, and millions of advertising dollars spent by manufacturers of vitamins, 'body building supplements,' 'sport aids' and like quackery. To further complicate our task, most of the commonly used agents have not been scientifically tested, and many of those studies that have been done are slipshod or inconclusive. Moreover, the M.D. is all too grequently in competition with paramedical 'sports experts' who want notoriety in the field. These self-styled experts are often not bound by the rules of scientific proof, logic and ethics which characterize the medical profession. Popular magazines geared for athletes are rife with quack theory and testimonials espousing various sport aids.

The picture is frankly dismal. Drugs will be part of sports for the forseeable future. What then can the physician do to protect his athlete patient? First, he should stress the reasons to avoid using drugs in sports. Drugs are a blatant form of cheating, a basic violation of the ethics of fair play in sports. The International Olympic Committee (IOC) takes this stand and bans for life athletes caught using drugs. A list of agents banned by the IOC is shown on Table 1.

Another consideration is that most of the commonly used agents are expensive and useless. Megadoses of water soluble vitamins, for example, earn millions of dollars for drug manufacturers and nothing for athletes, except expensive urine. Side effects should also be stressed. Numerous deaths have been caused by amphetamines and vasodilator drugs. Alcohol, amphetamines and narcotics are habit-forming. Corticosteroids and local anesthetics can interfer with normal healing, aggravate injury and ultimately cut short an athlete's competitive life.[1]

---

RICHARD J. MANGI, M.D., Assistant Clinical Professor of Medicine. PETER JOKL, M.D., Associate Professor of Orthopedics; both of the Yale University School of Medicine.

Table 1
DOPING SUBSTANCES BANNED BY IOC

| *Psychomotor Stimulant Drugs* |
|---|
| Amphetamine |
| Benzphetamine |
| Cocaine |
| Diethylpropion |
| Dimethylamphetamine |
| Ethylamphetamine |
| Fencamfamin |
| Methylamphetamine |
| Methylphenidate |
| Norpseudoephedrine |
| Phendimetrazine |
| Phenmetrazine |
| Prolintane |
| and related compounds |
| *Sympathomimetic Amines* |
| Ephedrine |
| Methylephedrine |
| Methoxyphenamine |
| and related compounds |
| *Miscellaneous Central Nervous System Stimulants* |
| Amiphenazole |
| Bemigride |
| Leptazol |
| Nikethamide |
| Strychnine |
| and related compounds |
| *Narcotic Analgesics* |
| Heroine |
| Morphine |
| Methadone |
| Dextromoramide |
| Dipipanone |
| Pethidine |
| and related compounds |

Table 2
NUTRIENT SPORT AIDS

| | |
|---|---|
| Foods | Protein supplements<br>Carbohydrate supplements<br>Carbohydrate loading |
| Vitamins | Megadoses of C, $B_1$, $B_{12}$, E<br>Phony vitamins - $B_{15}$ |
| Other Nutritional Substances | Trace Metals (zinc, iron, calcium, magnesium, potassium, phosphorus)<br>Silicone, Lecithin - phosphatide |
| Fluids and Electrolytes | Water, Ade drinks, Salt pills |

Lastly, the physician must be able to converse with an athlete. He must arm himself with a working knowledge of drugs used in sport, the hypothetical benefits, the actual effect on performance and the side effects. To this end, we will briefly outline and review agents used by athletes. This discussion is not intended to be exhaustive or complete, but only to serve as a guide for further study. We have divided these agents into nutrients, pharmacologic ergogenic aids, pain relievers and restoratives.

I. **Nutrients** - While there is no doubt that proper nutrition is as important for athletes as it is for the rest of mankind, there are a host of nutrients falsely touted as sport aids (Table 2). Most of these fall in the same wastebasket as hair restoratives and geriatric aphrodisiacs. Some, however, deserve closer scrutiny.

**Foods** - Various protein supplements are used by athletes, particularly football players and weight lifters. These substances are mistakenly thought to increase strength. On a semi-religious level, some teams consume steak together at a last supper the night before the big game. Others resort to expensive supplements containing amino acids or protein. Gelatin, an incomplete protein rich in glycine, or glycine itself is the most common component. There is not one shred of evidence supporting benefits of protein-rich diets for athletes. To the contrary, the result is often acidosis and diets undesirably high in cholesterol.

Carbohydrate supplements are advertised as quick sources of energy to enhance power, speed and endurance. These claims are false. Moreover, studies reveal frequent symptomatic rebound hypoglycemia when carbohydrates are taken just prior to strenuous exercise.[2]

On the other hand, carbohydrate loading by endurance athletes, particularly marathon runners, is a popular practice that might be of some benefit.[3] This consists of two dietary phases beginning a week prior to a race. During the carbohydrate depletion phase, an athlete eats a high-protein, carbohydrate-poor diet for three days. On the fourth day muscle stores of glycogen are further depleted by one to two hours of exercise. During the three days prior to competition a carbohydrate rich diet is consumed. In theory, glycogen-depleted muscles will pack extra stores during the carbohydrate loading phase and provide extra fuel for aerobic metabolism. Serial muscle biopsies do indeed show increased stores of muscle glycogen. Improved performance from carbohydrate loading, however, is more difficult to document. In addition, the depletion phase produces uncomfortable acidosis and fatigue. Most marathon runners forgo depletion, and simply rest and eat a carbohydrate rich diet for three days before a race. A recent study demonstrates that this practice enhances muscle glycogen as well as standard carbohydrate loading.[4]

**Vitamins** - While millions of dollars are spent on vitamin supplements, there is virtually no evidence supporting their use in sport.[5] Megadoses of vitamins C, $B_1$, $B_{12}$ and E are common. Despite the fact there are no studies showing that vitamins C or B have any effect on performance, olympic athletes have been observed taking enormous doses (10 grams of vitamin C and 1 gram of vitamin $B_{12}$) just prior to competition.

Vitamin E, the main component in wheat germ oil, is touted to decrease mental and physical fatigue. Alpha tocopherol is the most potent of seven related compounds with vitamin E activity. While some animal studies show increased endurance, human experiments reveal no effect on performance.[6]

Large doses of vitamins A and D have long been known to cause disease. The long term effect of megadoses of other vitamins is unknown.

No discussion of vitamins would be complete without mention of those disreputable promoters who try to achieve vitamin status for their products. "Vitamin $B_{15}$" is a current fad. Scientific evidence to back claims of its efficacy consist mainly of testimonials from aging movie actresses and professional boxers.

**Other Nutritional Substances** - Various inorganic substances are always in vogue. Current popular ones include zinc, iron, calcium, magnesium. There is absolutely no proof that any of these substances alter performance. In many cases it is not even clear what exactly the manufacturer claims the product has to offer. Some, such as magnesium and zinc can cause serious side effects.

**Fluid and Electrolyte Solutions** - Replacement of body fluid and electrolytes lost during exercise is essential. During competition, however, only water is needed to perform and survive. Replacement of body water is essential when exercising in hot, humid weather. In order to prevent heat stroke, 6-8 ounces of water should be ingested during every 15 minutes of strenuous exercise in hot, humid weather. Water is superior to expensive-ade drinks. Contrary to popular dogma, the addition of sugar and electrolytes to water may impede athletic performance.[7] These agents, particularly sugars, delay gastric emptying of fluids, and thereby delay water absorption into the circulation.

Since electrolyte loss during sweating is relatively small, it should be replaced after exercise with-ade drinks or better yet, with fruit juice.

Salt pills have virtually no place in the modern treatment of athletes. Not only are they useless, they may be dangerous. Excessive salt load in the gastrointestinal tract may inhibit water absorption and potentiate dehydration.

**II. Pharmacologic Ergogenic Aids** - Drugs of various types are used to delay fatigue, to calm jittery nerves, to stimulate the nervous system, to enhance oxygen delivery to muscles, and to increase muscle strength (Table 3). Most of these agents are useless and many are associated with serious side effects, drug addiction and even death. Moreover, they may predispose an athlete to other complications and injuries. For example, a drug that masks fatigue also masks danger signals of heat stress and can lead to heat stroke.

**Central Nervous System Stimulants** - Caffeine has been used for years to improve mental and physical performance. It is a strong central nervous system stimulant. Some claim it increases motor activity, decreases reaction time and allays fatigue. It is also a peripheral vasodilator and a direct skeletal muscle stimulant. Despite all these actions, there is no evidence caffeine improves speed or performance, with one exception. Caffeine induces enzymes that burn free fatty acids essential for aerobic metabolism during endurance events such as long distance races. While this subject remains controversial, there are studies indicating that the amount of caffeine in two cups of coffee will enhance performance during long distance (races greater than 5,000 km.)[8]

Table 3
PHARMACOLOGIC ERGOGENIC AIDS

| *Central Nervous System Stimulants* |
|---|
| Caffeine<br>Cocaine<br>Camphor<br>Coramine<br>Strychnine<br>Metrazol |
| *Autonomic Nervous System Stimulants* |
| Amphetamines<br>Epinephrine |
| *Central Nervous System Depressants* |
| Barbituates<br>Alcohol<br>Nicotine |
| *Vasodilators* |
| Choline esters<br>Androgenic or ganglionic blocking agents<br>Nitrites<br>Veratrum alkaloids |

Cocaine is another central nervous system stimulant which is supposed to increase work capacity by decreasing fatigue. It is both a central and peripheral autonomic nervous system stimulant with no direct action on skeletal muscle. Endurance athletes claim cocaine speeds recovery. Cocaine is a habit-forming narcotic and is more dangerous and more expensive than caffeine, but there is no evidence it enhances athletic performance.

**Autonomic Nervous System Stimulants** - Amphetamines are perhaps the most widely used of all doping agents. These drugs stimulate the medullary respiratory center and excite the brain stem reticular activating center to facilitate mono- and polysynaptic transmission in the spinal cord. They also increase cardiac output, but have no effect on endurance or recovery time. Unfortunately an early study of amphetamines indicated decreased reaction time, increased coordination and increased performance in swimmers, runners and weight throwers.[9] Other investigators have criticized this study and most now agree that amphetamines have little or no effect on performance in sport.[10] In fact, there is little place for these drugs in any area of medical practice.

**Central Nervous System Depressants** - Athletes frequently use alcohol to relax prior to and after competition. It does, however, impair performance. Alcohol increases reaction time and impairs coordination. It is also a myocardial depressant and a diuretic with a potential to facilitate dehydration. There seems to be little reason to drink before an event.

Barbiturate usage is sometimes a by-product of amphetamine use. Many athletes require barbiturates to come down from amphetamine highs. Some become addicts, slaves to a vicious circle of pills to get up and pills to come down.

**Vasodilators** - European cyclists use vasodilators to increase oxygenation of exercising muscle. There is little evidence to substantiate this practice. These agents are extremely potent, and are responsible for several deaths.[11]

**Androgenic Steroids** - Weight lifters, shotputters and football players use androgenic steroids to increase muscle bulk and strength. The usefulness of these agents is debatable. They do increase strength of debilitated patients,[12] and some animal studies support their effect on muscle size.[13] However, well controlled studies have failed to demonstrate an effect on young men.[14-15] Proponents of anabolic steroids claim these drugs work when combined with high intensity weight work-outs and high protein diets. Others claim steroids diminish fatigue and allow more intensive work-outs, thus leading to increased muscle strength. On one point there is no disagreement: these drugs are associated with substantial side effects, including testicular atrophy, prostatic hypertrophy, cholestatic hepatitis, salt retention, decreased height in pre-adolescent children, and masculinization of women athletes.

**Blood-Doping** - Frank Shorter's comments during the Munich Olympics spotlighted the practice of blood-doping. It has been claimed by some that many world class endurance athletes, particularly distance runners use blood-doping. An athlete is phlebotemized during high intensity training and two or three units of blood are frozen, stored and re-transfused just prior to competition. It is claimed the extra oxygen carrying power of the transfused blood gives the athlete an edge. While many authorities think blood-doping does work, it is banned by the IOC and other sports federations.

**III. Pain Relievers and Restorative Agents** (Table 4) - One of the greatest abuses of drugs in sport is the practice of using pain relievers to mask the symptoms of an injury, thus enabling an athlete to compete in an important contest. Baseball players have pitched World Series games, and football players have crunched bones in Super Bowls with joints and tendons numbed with local anesthetics. Not only is this practice responsible for long-term injury, it also puts unfair psychological pressure on professional athletes who are paid millions to perform. Conversely, some professionals claims their bodies are their own to damage as they see fit. While basketball player Bill Walton bitterly complains he was pressured to take pain relievers for a foot condition, and thereby developed permanent damage, Sandy Kofax's physician claims local injections into the pitcher's shoulder prolonged his baseball career.

Although money seems to muddle ethics in professional sports, physicians should take a strong stand on this subject. While pain relievers and restorative agents do have a proper place in sports, they should not be misused. Under no circumstances should the body's normal pain perception be altered to allow an athlete to compete.

Table 4
PAIN RELIEVERS AND RESTORATIVE AGENTS

| *Local Agents* |
|---|
| Ethyl chloride |
| Xylocaine |
| Maracaine |
| Corticosteroids |
| DMSO |
| *Analgesics* |
| Demerol |
| Talwin |
| Darvon |
| Codeine |
| *Anti-inflammatory Agents* |
| Salicylates |
| Indomethacin |
| Sulindac |
| Butazolidine |
| Corticosteroids |
| *Enzymes* |
| Papain |
| *Muscle Relaxants* |
| Diazepam |
| Robaxin |

**Local Agents** - Ethyl chloride spray is effective in treating superficial pain from abrasions and muscle spasm. It is short acting and relatively harmless as long as it is not applied with such enthusiasm that freezing of the skin occurs.

Short acting (Xylocaine) and long acting (Marcaine) nerve-blocking agents are much abused to mask pain associated with tendon and joint pain. They are so effective that they allow serious damage to occur painlessly. These agents should not be used to allow an ahtlete to play.

Local injections of corticosteroids are quite useful in the treatment of chronic tendinitis and bursitis. Rarely should they be injected intraarticularly or repeatedly in the same site.

Dimethylsulfoxide (DMSO) is touted by the lay press as a miraculous drug for arthritis and local pain. When rubbed on the skin it has a unique property of deep tissue penetrance. There are no controlled studies to indicate DMSO reduces pain or inflammation. One concern is that this agent carries impurities from the skin into the tissue, including carcinogens present in industrial-grade DMSO. This drug is not approved by the FDA for human use.

**Analgesics** - Most athletes take pain relievers from time to time. Unfortunately many use narcotic and habit forming drugs such as Demerol, Talwin and Darvon. For this reason we rarely recommend them, and prefer instead agents with combined analgesic/anti-inflammatory action.

**Anti-inflammatory Agents** - Salicylates are extremely useful in sports, particularly for the treatment of acute and chronic inflammation. They are potent prostaglandin synthetase inhibitors and help prevent lysosomal enzyme induced cartilage damage in conditions such as chondromalacia. Gastrointestinal bleeding, however, may be particularly insidious in a well trained athlete. Careful patient instruction and periodic evaluation for occult blood loss is therefore essential.

Of the other non-steroidal anti-inflammatory agents, the authors prefer Indomethacin and Sulindac to Butazolidine, and avoid the latter drug because of its serious side effects.

Systemic corticosteroids are rarely indicated in the treatment of sports injuries.

It must be emphasized that no matter which analgesic or anti-inflammatory agent is used, it should be combined with a proper recovery period and rehabilitation program before resumption of competition.

**Enzymes** - The use of enzymes to speed resorption of blood products from the site of an injury is of dubious value. We find no reason to recommend their use.

**Muscle Relaxants** - Diazepam is used too frequently as a muscle relaxant. This drug causes addiction and depression, and should be strictly avoided. Robaxin does relieve painful muscle spasm without the side effects of Diazepam. It impairs coordination, however, and should not be used to allow competition.

## REFERENCES

1. Behrens F, Shepard N, Mitchell N: Alteration of Rabbit Articular Cartilage by Intra-Articular Injections of Glucocorticoids. J Bone Joint Surg 57A: 70-76, 1975
2. Foster C, Costill DL, Fink WJ: Effects of Pre-Exercise Feedings on Endurance Performance. Med Sci Sports Spring 11(1):1-5, 1979
3. Bergstrom J, Hermonsen L, Hultman E, and Saltin B: Diet, Muscle Glycogen and Physical Performance. Acta Physiol Scand 71:140-50, 1967
4. Forgac MT: Carbohydrate Loading, A Review. J Am Diet Assoc 75(1):42-45, 1979
5. American Dietetic Association: Nutrition and Physical Fitness: A Statement by the American Dietetic Association. J Am Diet Assoc 76-437-43, 1980
6. Schoff ER, Levin E: Beneficial Effect of an Unidentified Factor in Wheat Germ Oil on the Swimming Performance of Guinea Pigs. Fed Proc 14:431, 1955
7. Coyle EF, Costill DL, Fink WJ, and Hoopes DG: Gastric Emptying Rates for Selected Athletic Drinks. Res Q 49:119-24, 1978
8. Costill DL, Dalsky GP and Fink WJ: Effects of Caffeine Ingestion on Metabolism and Exercise Performance. Med Sci Sports 10:155-58, 1978
9. Smith GM, Beecher HK: Amphetamine Sulfate and Athletic Performance. JAMA 170(1):542-57, 1959
10. Chandler JV, Blair SN: The Effect of Amphetamines on Selected Physiological Components Related to Athletic Success. Med Sci Sports Exer 12:65-69, 1980
11. Soft Peddling the Vicious Cycle. Med World News August 12:51-53, 1966
12. Hettinger TH: Physiology of Strength. C.C. Thomas, Springfield, p 44-53, 1961
13. American College of Sports Medicine: Position Statement on the Use and Abuse of Anabolic-Andragenic Steroids in Sports.
14. Samuels LT, Henschel AF, Keys A: Influence of Methyltestosterone on Muscular Work and Creatine Metabolism in Normal Young Men. J Clin Endocrinol Metab 2:649-54, 1942
15. Fowler WM, Gardner GW, Egstrom GH: Effect of an Anabolic Steroid on Physical Performance of Young Men. J Appl Physiol 20:1038-40, 1965
16. Gledhill NF, Buick G, Froese AB, Spriet L and Myers EC: An Optimal Method of Storing Blood for Blood Doping. Med Sci Sports 10:40, 1978
17. FDA Drug Bulletin 10:20-21, November 1980

With half an hour's reading in bed every night as a steady practice, the busiest man can get a fair education before the plasma sets in the periganglionic spaces of his grey cortex.
—Sir William Osler

# Arthroscopic Knee Surgery in Athletes

JOHN P. FULKERSON, M.D.

**ABSTRACT—Arthroscopic knee surgery offers many advantages including shorter convalescence, decreased pain, less hospitalization, more rapid return to athletics, accurate treatment of intra-articular problems and less overall expense. Many meniscal problems, loose bodies, and other intra-articular problems can be treated effectively with arthroscopic surgery techniques; however, there are some limitations which should be recognized by the patient and surgeon. If an intra-articular problem cannot be treated without damaging articular cartilage, arthroscopic surgery should be abandoned and formal arthrotomy utilized regardless of the drive to return to sports quickly. Referring physicians should tell their patients that arthrotomy may be necessary occasionally for the safe handling of some intra-articular problems so that the patient is not disappointed if this becomes necessary. Surgeons interested in doing arthroscopic surgery should recognize that it is a specialized skill requiring considerable training and experience.**

## Introduction

Watanabe can be credited with introduction of the arthroscope into modern medical practice.[1] This instrument has given the practicing orthopedic surgeon outstanding diagnostic capability in knee surgery and evaluation of other major joints. More recently, development of operative arthroscopy techniques using operating tools through separate small incisions in the knee has permitted the surgeon to perform intra-articular surgery under direct visualization without the morbidity associated with formal arthrotomy. There is little question about the accuracy and extreme importance of diagnostic arthroscopy[2] and it now appears that arthroscopic surgery has a definite and important place in knee surgery. The purpose of this article is to familiarize the practicing physician with advantages and disadvantages of operative arthroscopy so that he can give knowledgeable advice to athletes and other patients who ask about this procedure.

## Advantages of Arthroscopic Knee Surgery

Arthroscopic surgery provides a means of resolving many serious intra-articular problems without formal arthrotomy and open visualization of the knee. Complications are minimal with routine arthroscopy,[3] and operative arthroscopy adds little to this in terms of systemic complications, infection, or pain. Problems inside the knee can often be visualized better with an arthroscope than with the knee open. In view of this, the arthroscopist can perform accurate surgery with close attention to detail. Problems which were not formerly recognized are now acknowledged as significant causes of intra-articular pathology. The arthroscopist can often deal expeditiously with small fragments of meniscus, cartilage, or debris which prevent normal functioning.

One major advantage of arthroscopic surgery has been the markedly decreased postoperative morbidity and hospitalization. It is now possible to perform arthroscopic surgery on an outpatient basis and discharge the patient home on the same day. Rehabiliatation is quicker because of the minimal postoperative pain and little bleeding in the joint. Patients are generally very happy with the results and those who have had open surgery on a knee are amazed at the difference. Return to athletics is possible sooner because of the rapid rehabilitation and return to normal function. Limited bleeding undoubtedly minimizes the adverse effects of blood on articular cartilage.[4] In considering these factors, there is little doubt that arthroscopic surgery is an important advance with great advantages when used appropriately.

---

JOHN P. FULKERSON, M.D., Assistant Professor, Orthopedic Surgery and Director of Sports Injury and Knee Clinic, University of Connecticut School of Medicine, Farmington, CT.

## Disadvantages of Arthroscopic Surgery

The disadvantages of arthroscopic surgery are much more difficult to define and are not obvious to the patient undergoing the procedure. It should be recognized however that the tremendous subjective advantages of such a technique tend to make the surgeon and the patient very eager to undertake it. In view of this, it is particularly important to consider the disadvantages of arthroscopic surgery so that knowledgeable decisions can be made regarding its appropriate use.

A critical factor in determining whether arthroscopic surgery is successful is the extent to which articular cartilage damage can be avoided. There is little question that certain problems such as loose bodies,[5] division of plicae,[6] and removal of meniscal fragments and bucket handle tears[7] can be handled quickly and safely without violating articular cartilage. It must be recognized however that arthroscopic surgery is difficult to learn, requiring considerable experience and training. In view of this, the operating surgeon should attempt to perform these procedures only when he has achieved the ability to complete them safely without injury to articular cartilage. Considerable experience with diagnostic arthroscopy is a minimal prerequisite to doing operative arthroscopy.

The question of total arthroscopic menisectomy and other intra-articular surgery which may involve considerable use of instruments between articular surfaces is unanswered. Experience with arthroscopy permits the surgeon to accomplish more with little or no trauma to joint surfaces but there are some intra-articular problems which can only be handled by passing instruments repeatedly across the articular surfaces. As techniques are refined, however, it becomes possible to do more intra-articular surgery with less risk to articular cartilage.

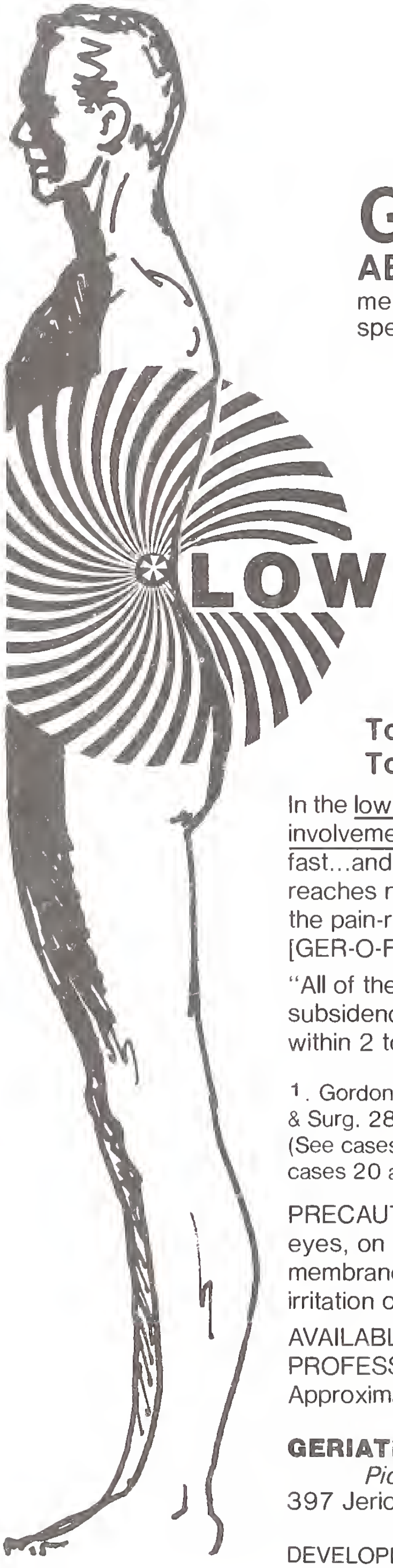
Recent research has shown that trauma to articular cartilage can cause release of arachadonic acid,[8] which is now known to cause arthritic degradation of articular cartilage.[9] Arachadonic acid is a precursor of prostaglandins, which also causes degradation of cartilage.[10] This process of cartilage destruction may be self-perpetuating and should therefore be avoided vigorously. In view of this, arthroscopic surgery should be done carefully and with a willingness to perform arthrotomy when articular cartilage may be in jeopardy by pursuing the arthroscopic surgery route. The surgeon who is aware of articular cartilage behavior and consequences of damage to articular surfaces will recognize this and will avoid injuring the joint unnecessarily. Lack of respect for articular cartilage is probably the greatest danger in arthroscopic surgery.

This potential disadvantage of arthroscopic surgery is difficult to evaluate since arthrotomy and open surgery of the knee can undoubtedly give rise to articular cartilage damage as well. At our present state of knowledge however it is clear that passing arthroscopic instruments across curved surfaces where they cannot fit easily carries risks. It behooves the surgeon to know the limitations of this type of surgery and to do what is necessary to avoid articular cartilage injury. While the drive of an athlete to return to sports can make the surgeon reluctant to open his knee, it is important that a decision to open is made independent of these concerns.

As arthroscopic surgery develops further, it is likely that use of lasers, improved instruments, and techniques which further minimize the risk of mechanical trauma to joint surfaces will permit even safer and more accurate approaches to intra-articular derangement. It must be emphasized, however, that the skilled arthroscopist may already be able to handle the majority of intra-articular problems safely with arthroscopic techniques.

### REFERENCES

1. Watanabe M: The development and present status of the arthroscope. J Jap Med Inst 25:11, 1954
2. Dandy DJ and Jackson RN:The impact of arthroscopy in the management of disorders of the knee joint. J Bone Joint Surg (Br) 57:346, 1975
3. McGinty JB and Freedman PA:Arthroscopy of the knee. Clin Orthop Rel Res 121:173, 1976
4. Hoaglund FT:Experimental hemiarthrosis effect on articular cartilage. J Bone Joint Surg 49-A:285, 1967
5. Aritomi H and Yamamoto M:A method of arthroscopic surgery. Orth Clin North Am 10(3):565, 1979
6. Hughston JC, Andrews JR, and Waddell DD:The suprapatellar plica: Its role in internal derangement of the knee. Orthop Trans 2:199, 1978
7. McGinty JB: Arthroscopic surgery in sports injuries. Orthop Clin North Am 11(4):787, 1980
8. Chrisman OD and Bellis IM: Nicholas Andry Award Paper. Association of Bone and Joint Surgeons 1981
9. Chrisman OD, Ladenbauer-Bellis I and Fulkerson JP: The osteoarthritis cascade and associated drug actions. Sem Arth Rheum XI(I) Suppl 1:145, 1981
10. Fulkerson JP, Ladenbauer-Bellis IM and Chrisman OD: In vitro hexosamine depletion of intact articular cartilage by E-prostaglandins. Arthritis Rheum 22(10):1117-1121, 1979



**GER-O-FOAM™**
**AEROSOL FOAM FOR MASSAGE**
methylsalicylate 30% and benzocaine 3% in a specially processed oil emulsion

**For Fast, Long-Lasting Relief in**
**LOW BACK PAIN**
**Rheumatoid and Osteoarthritis**

**Topically Applied Anesthetic/Analgesic To Reduce Minor Pain.**

In the low-back syndrome and other areas of painful musculo-skeletal involvement, massage with new-formula GER-O-FOAM relieves pain fast...and for long periods of time. The anesthetic/analgesic action reaches nerve endings speedily...and thus "it was difficult to ignore the pain-relieving efficiency of massage with topical analgesic [GER-O-FOAM]"[1]

"All of the acute patients report satisfactory subsidence of pain and improvement within 2 to 14 days"[1]

[1]. Gordon, E.E. and Haas, A., Indust. Med. & Surg. 28:217, 1959. (See cases 2, 10, 15, 18, 35, 36 in Table I; cases 20 and 31 in Table II).

**NEW IMPROVED FORMULA**

PRECAUTIONS: Do not use in or near eyes, on open wounds or mucous membranes. Discontinue if excessive irritation of the skin develops.

AVAILABLE ONLY THROUGH THE PROFESSIONS in 4 oz. cans. Approximately 125 applications in each can.

**GERIATRIC PHARMACEUTICAL CORP.**
*Pioneers In Geriatric Research*
397 Jericho Turnpike, Floral Park, N.Y. 11001

DEVELOPERS AND SUPPLIERS OF CEVI-BID • GAYSAL • B-C-BID

# An Interview with Senator Gerald Labriola, M.D.

The following are answers by Senator Gerald Labriola, M.D. of Naugatuck, to questions regarding his experience during his first term in the State Senate.
—FRED FABRO, EDITOR

**1. Why have you, a successful pediatrician, entered politics?**

In my medical career, I have tried to respond to human needs and believe that is precisely what I have thus far done and will continue to do in this public sector career which has been launched—which, in a fashion, is simply an extension of what I have been doing all my professional life. Both my own background to this point and what I call "effective wholesome politics" share a common ground of leadership, judgment, commitment and above all, that ever precious to me "response to human needs". One hears so often the phrase, "quality of medical care". Would that it might be commonly heard some day, "quality of political service".

**2. Are you the first M.D. ever elected to the Senate?**

Yes.

**3. Did anything surprise you in the General Assembly?**

I was pleasantly surprised at the intensity with which all the legislators work. It is more than a full-time job for the vast majority of them, and I had not expected this.

**4. From a personal standpoint, what was the high point of the session?**

Being chosen Freshman Senator of the Year by my Republican and Democratic colleagues.

**5. The low point?**

Passage of the budget and passage of the revenue package which contained the unincorporated business tax act. I spoke out against and voted against both.

**6. I understand you have been encouraged to run for governor. Has anyone called attention to your "newness" as a possible liability in a gubernatorial run?**

In this regard, I am in the midst of an "exploratory expedition" around the state. The degree of encouragement and support from all sectors may be difficult to resist but, in any event, I shall come to a decision sometime between Labor Day and Christmas.

With respect to "newness," politicians are not like vintage wine; they don't necessarily get better with age. I could accumulate more years as a legislator, but then might not be any more effective a leader than now. We are, of course, speaking of the executive branch of government. In my view, governors must govern, and governance is leadership and judgment. An examination of one's curriculum vitae would reveal leadership experience and certainly judgment is practiced daily by all busy physicians.

GERALD LABRIOLA, M.D., State Senator, 15th District. Dr. Labriola holds the distinction of being the first practicing physician to serve in the Senate and was chosen Freshman Senator of the Year. Former four-term chief of staff at Waterbury Hospital, he is assistant clinical professor of pediatrics, UConn Health Center, and a pediatrician in private practice on the attending and teaching staff of Waterbury and St. Mary's Hospitals.

**7. What three areas are the most important facing this state in the next several years?**

a) Spending and taxes.
b) Spending and taxes.
c) Spending and taxes.

**8. What is your feeling re the unincorporated business tax?**

Back in February, I coined the phrase "thinly-veiled income tax" which the media picked up on. It is a stifling, discriminatory tax - punitive to the most enterprising and resourceful segment of our Connecticut society. The act penalizes free enterprise and the entreprenurial spirit by discriminating against those who earn their livelihood by assuming the risks of business rather than by salaries and wages. Fundamentally, assuming risks of investment in this or that business or profession with the possible result of either success or failure is, after all, the cornerstone of the free enterprise system. Of course, the title of the act is a misnomer because it also deals harshly with small corporations. The most frustrating aspect is that it is not necessary if only spending were reduced.

**9. Would you encourage others in the medical profession to enter politics?**

Yes, absolutely.

**10. Your gun control bill, which will become law this year, nearly failed. What was that all about?**

Initially, my bill calling for mandatory five-year prison sentences for the commission of a felony with a firearm was watered down to one year. But then after the president was shot, I resurrected the five-year provision and it sailed through the judiciary committee and both chambers. The governor signed it and it will be the law of Connecticut October 1. Incidentally, I like to think of this as a "criminal control" rather than a "gun control" law.

**11. What medically-related topics were you involved in?**

As ranking member of the Public Health Committee, all medically related proposed bills came to my attention. They included such areas as mental retardation, emergency medical service, nursing homes, nurse pools, home health care, licensure and boards, drugs, dentistry, elderly care programs, castastrophic health insurance, and the Commission on Hospitals and Health Care, and many others—hundreds in fact.

**12. What was your position on the marijuana bill?**

The bill that finally passed was a partisan, political ruse because it was nearly, word for word, what is already in statute. My bill reflected my feeling that if we are at all to make the marijuana cigarette more available to those having severe side effects of chemotherapy which are not ameliorated by conventional antiemetic therapy, then those oncologists who are authorized to prescribe the oral form (THC) should be the only ones who could also prescribe the inhalant form.

## Connecticut Spotlight: A Rising Political Star

Early in the major league baseball season, Dodger rookie pitching sensation Fernando Valenzuela was tearing up the opposition. His manager, Tom LaSorda, said the young Mexican was throwing "as if there's a higher league somewhere."

The same comment might be applicable to a new state senator who has been winning plenty of confidence from his colleagues in Hartford and has been pitching as if there is a higher office awaiting him. Dr. Gerald Labriola, the first-term senator from Naugatuck and the 14th district, has already sewed up "rookie of the year" honors in the legislature after the first year of his term. And he looks like a solid bet for an upward move through the GOP's ranks.

Labriola, a pediatrician from a working class Italian family, has so many friends around the state that he has found himself the subject of an ad hoc "Friends of Labriola" Committee, a kind of Labriola "for anything" move that is sometimes used by political promoters. Affable and energetic, the doctor, who makes morning hospital rounds before journeying off to the legislative sessions, is looking for an opening and may soon declare his intentions for an office as high as the governorship.

Such a move would be precedent-shattering, but Labriola has proved able to shatter precedents already. After graduating from Yale Medical School and holding various official posts and putting three children through college, he turned to politics, he says, as a way of continuing his service to people. He is an economic conservative who describes himself as "right of center" on social issues like abortion and gay rights. The doctor took on Sen. Louis Cutillo last year, and promptly impressed first the voters then colleagues like Bridgeport Sen. Howard Owens, the chairman of the Judiciary Committee, who has praised Labriola's committee work and articulate manner.

Light on political experience but long on public service, Labriola sports a lengthy resume listing his appointments to hospital boards, his work with charity and Yale alumni groups, and local board of education terms. He says he has worked with children, parents, and grandparents, and thus knows the needs of each group. And, according to many Republicans, his is just the kind of fresh face and personality that could bring voters around to the GOP in a statewide race.

Labriola, at the end of the legislative session, said he remained uncertain about it all. There has been support from every part of the state for me to run for governor," he says. "But I haven't had the time to give it one hundred percent of my thoughts." If a full-scale boom developed, Labriola could overtake some better-known Republicans, like former Sen. Richard Bozzuto and Sen. Russell Post, both announced candidates, and go to the top. If he fell short, he could run as a lieutenant governor or underticket candidate with the party. On that subject, he remains unready to commit himself.

Others have said Labriola's experience and reputation as a professional would make him an ideal candidate for Congress from the Fifth District. But that race could lead him to leave behind a longstanding pediatrics practice to move to Washington. He says he's not sure he'd be happy doing that.

But whatever he decides, Labriola appears headed for an early moment of decision in the GOP. His speaking schedule, he says, is booked through to December. He's succeeded in backing major bills this year, such as the five-year mandatory firearm possession measure, that appear popular with voters. He has been a quick study, say Senate members, who understands complex legislation and the effect it will have on people. And he has relished the Senate and its cozy "circle," a quality not all-Senate members exhibit with the enthusiasm he has.

But a rising star in the political world can be recognized and quickly attacked. If he tries to move too far too fast, Labriola will offend some Republicans. If he reaches too high and fails, he would become a political asterisk. But right now, he's one of the hottest members of a GOP that desperately needs a new look.

---

DICK DAVIES, syndicated columnist, Connecticut State News Bureau. *Reprinted with permission.*

# Report from the Assembly

(Second of Two Parts)

JOSEPH S. COATSWORTH

In Part I of this report, published in last month's issue of *Connecticut Medicine,* we reported on the research conducted by the General Assembly's Program Review and Investigations Committee, as part of its "Sunset" review of the state Commission on Hospitals and Health Care (CHHC). We noted then that, while the committee's research had been sound and many of its recommendations helpful, it was still the general feeling of the hospital community that the committee had not really dealt with the real reason why hospital regulation had had such a controversial history in this state—that is, the absence of positive incentives to control costs.

It was because the committee had not found a way to deal with this problem of positive incentives that the Connecticut Hospital Association (CHA) chose to make this subject the top priority of its Legislative Program for 1981. CHA's approach was twofold: on the one hand, we proposed that the Commission be changed from a body that reviewed hospital budgets to one which focused in on the key element of hospital rates. Furthermore, we proposed that, if a hospital could demonstrate that a rate increase which it was seeking was no more than two percent above an objectively determined inflation level established by the U.S. government, then that hospital would have its rate increase approved and would not have to undergo further time-consuming and expensive budget review.

It was CHA's belief that this second change would provide the positive incentive to hold down costs, which was lacking in the state's hospital regulatory system.

In putting together its proposal, CHA drew on the experience of other states where hospital regulatory boards operated. In nearly all these states, the model used was a rate-review one, rather than the budget review model employed in Connecticut.

Although the CHA bill was supported by hundreds of hospital representatives at a public hearing in the hall of the state House of Representatives in February, and it was later given a favorable report and sent to the General Assembly's Government Administration and Elections (GAE) Committee, it was later decided by GAE not to incorporate the measure into the official Commission "Sunset" bill. Instead, the GAE leadership decided to make its own changes in the "Sunset" bill, the principal two of which were the following:

1. To abolish the part-time 17 member Commission in favor of a three-member full-time body (effective date: July 1, 1981);
2. To use a new measurement—cost per equivalent admission—as the basis for the Commission's budget review process (effective date: January 1, 1982).

In proposing to do away with the part-time Commission, the GAE leadership was essentially responding to the Program Review Committee's criticism which had chided the part-time Commissioners for allowing themselves to be dominated by their full-time staff, a problem which hospitals had been aware of for some time.

In proposing to change the basis by which the Commission initially evaluated hospital budgets, the legislative leaders were seeking to reform the regulatory process so that, while still effectively controlling costs, it was no longer a danger to health-care quality.

The changes were presented to both Commission and hospital supporters as a "compromise", and while hospital officials initially had some reservations about certain aspects of the changes, they ultimately accepted them in the spirit in which they were offered. Commission supporters, however, immediately

---

JOSEPH S. COATSWORTH is the Connecticut Hospital Association's Vice President of Government Relations. A veteran of five terms in the state legislature, he served as both Assistant Majority Leader and later as Deputy Speaker in the state House of Representatives.

attacked the GAE proposal, saying that its enactment would, in effect, "gut" the Commission and make hospital regulation in Connecticut a sham. Despite these claims, the changes, together with the rest of the CHHC "Sunset" bill, were passed by the state Senate 31-5 and in the state House of Representatives 103-38. It was then signed into law in June.

Although Commission supporters lost their battle in the State Legislature, they have continued it using other means, principally the news media. They have claimed, for example, that the new system for reviewing budgets would permit most hospitals to escape review, although the CHA's own data shows that, had the new system been in effect this year, 23 out of 35 hospitals still would have had to face complete budget review. The opponents also claimed that the changes would increase state Medicaid costs by $3-4 million, although they offered no substantive evidence actually showing that this would be so.

Finally, the opponents of changes in the Commission statute claimed the new procedures will increase commercial and other insurance rates, although Blue Cross & Blue Shield of Connecticut, the state's largest health care insurer, did not oppose the new rules.

Unfortunately, the opponents have been able to persuade Governor, William A. O'Neill, to join their ranks, with the result being that on July 1st, the Governor appointed to the new full-time Commission three persons who all observers agreed were "no allies of hospitals." They are F. Bernard Forand, the executive director of the former part-time Commission, who is now the new Commission's chairman, Glenna Michaels, former president of the Southwestern Connecticut Health Systems Agency and Michael Fierri, D.D.S., a Bristol dentist.

Besides appointing an extremely unbalanced and one-sided Commission, Governor O'Neill has also indicated he intends to work to revoke the changes made in the Commission's authority this year. Whether this indeed will happen when the State Legislature reconvenes in February remains to be seen.

---

## Survey Shows Need for Surgical Physician Assistants

Heads of surgery departments in large general hospitals predict an 87 percent increase in the employment of surgical physician assistants during the next five years, according to a recent survey. Funded by the National Center for Health Services Research (NCHSR) and the National Institutes of Health, the survey of 552 general hospitals having 400 or more beds found that surgical physician assistants were working in one-third of those institutions providing preoperative, intraoperative and postoperative care. Two-thirds of the surgery department heads responded that the use of physician assistants had improved surgical patient care. In institutions with surgical housestaff, nearly half of the respondents felt that surgical physician assistants had improved the quality of residency training. The authors of the study, Henry Perry, M.D., of the Maine Medical Center; and Don Detmer, M.D., and Elinor L. Redmond, B.A., of the University of Wisconsin, concluded that "appropriately trained and supervised surgical physician assistants will play an increasingly important role in improving the care of surgical patients and, by functioning as junior housestaff, make it possible to reduce the number of surgeons being trained." The results of their study, "The Current and Future Role of Surgical Physician Assistants: Report of a National Survey of Surgical Chairmen in Large U.S. Hospitals," appeared in the February 1981 issue of *Annals of Surgery.*

*—National Center for Health Services Research, Research Activities, March 1981*

# Coronary Artery Bypass Surgery

## SPONSORED BY THE NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

Assisted by the Office for Medical Applications of Research, NIH

### Introduction

The National Institutes of Health consensus development program brings together biomedical research scientists, practicing physicians, consumers, and others as appropriate, in an effort to reach general agreement on the safety and efficacy of a medical technology. That technology may be a drug, device, or medical or surgical procedure.

Following consensus meetings, summaries of conclusions and recommendations issued by consensus panels are widely distributed to the research, practicing, and lay communities. All shades of opinion are reflected in those summaries.

At NIH, the Office for Medical Applications of Research (OMAR) is responsible for coordination of the consensus development program. OMAR assists the individual NIH institutes, which sponsor the conferences, in this effort.

A Consensus Development Conference was held at the National Institutes of Health on December 3-5, 1980 to consider the status of coronary artery bypass surgery in relation to five specific questions:

1. What is the overall management of coronary artery disease—that is, in what context should coronary artery surgery be considered?
2. What constitutes a reasonable diagnostic workup before recommending medical or surgical therapy?
3. What is known about long-term survival after coronary artery bypass surgery in specific patient groups?
4. What is known about long-term quality of life after coronary artery bypass surgery?
5. What is the range of success rates for the procedure in various settings, and what factors may be important in influencing this outcome?

### 1. What is the overall management of coronary artery disease—that is, in what context should coronary artery surgery be considered?

Coronary heart disease may be recognized by the physician as the clinical syndromes of angina pectoris, acute myocardial infarction, sudden cardiac arrest or ischemic cardiomyopathy. It may also be recognized in an asymptomatic form by detection of electrocardiographic evidence of prior myocardial infarction not recognized during the acute episode or by characteristic abnormalities of the electrocardiogram during exercise testing of apparently healthy persons. Once suspected by the physician, the diagnosis may be confirmed with various levels of certainty by one or more special diagnostic tests. The tests most commonly used include the electrocardiogram recorded during and after monitored graded exercise, in some instititutions radionuclide studies of myocardial perfusion and ventricular function at rest and in response to exercise, and coronary arteriography with left ventricular angiography. In addition to confirming the diagnosis, such studies may provide information about the pathology and anatomy of the coronary arteries, the functional condition of the left ventricle, and the overall response of the circulation to stress. These data may be combined with those obtained from the medical history and physical examination and with detailed knowledge of the natural history of the disease derived from many long-term follow-up studies of patients having such tests, to form definable subsets of persons with widely different prognoses. Since a fundamental aspect of advanced coronary heart disease is a greatly increased probability of sudden death or myocardial infarction, such prognostic information strongly influences the decision on whether to add coronary artery bypass surgery to the overall lifelong medical management recommended. If the combined data indicate that the patient is at high risk of sudden death or infarction for example, if the patient has severe stenosis of the main

---

NIH Consensus Development Conference Summary Vol. 3, No. 8

EDITOR'S NOTE: For further information about the "NIH Consensus Development Conference Summaries," contact the Office for Medical Applications of Research, Building 1, Room 216, National Institutes of Health, Bethesda, Maryland 20205.

trunk of the left coronary artery or severe and proximal stenosis of multiple major coronary branches—surgery is given especially serious consideration. On the other hand, if the studies indicate no critical stenosis of any major coronary branch, surgery is clearly not indicated and medical treatment is advised.

A very large percentage of patients fall between these extreme examples. In these patients, recommendations for medical or surgical therapy are based on two fundamental questions. The first question, often the most anxiety provoking to the patient, relates to which course will provide the greatest protection from disabling myocardial infarction or death. The second question relates to which course will permit a satisfactory quality of life according to the patient's own standards. The answers to these questions are highly judgmental. The answer to the first is largely based on the physician's interpretation of a large volume of sometimes contradictory data of extraordinary complexity. The answer to the second is largely based on the individual response to medical therapy and on the patient's priorities.

It is common practice for the physician and patient, when faced with this problem, to initiate comprehensive medical therapy with subsequent periodic reevaluation of the patient's response. It is critical to recognize that appropriate, comprehensive medical care of the patient with coronary heart disease requires an intensive effort on the part of the physician, involving consideration of almost every aspect of the patient's life. It requires careful education of the patient and spouse on the nature of the disease and its management to allow adequate selfcare on a continuing basis and to allow the patient to participate knowledgeably in major decisions affecting his or her life. It requires optimal control of risk factors for atherosclerosis and modification of the patient's lifestyle. This may affect both work and leisure activities. It may require long-term administration of such potent medications as nitroglycerin, beta-adrenergic blocking drugs, long-acting nitrates, anti-arrhythmic agents and digitalis. Effective and safe use of these therapeutic agents requires careful titration of dosage according to subjective and objective indexes. If, after such careful and intensive medical treatment, the patient believes that the quality of life is so adversely affected that other alternatives must be sought, then surgical therapy may be advised. It must also be recognized that in many cases dissatisfaction with the altered lifestyle imposed by the illness is the result of inadequate attention to the details of management; failure of the physician to educate the patient concerning appropriate use of the indicated medications may be a particularly important cause of this outcome.

In patients with chronic stable angina and good ventricular performance, the operative mortality associated with aorto-coronary revascularization of the heart, whether with autologous vein or artery, has progressively declined to 1 to 2 percent at major surgical centers. A corresponding decrease in perioperative myocardial infarction has been achieved. These results are assumed to relate to better management of anesthesia, more complete myocardial revascularization, and improved methods for protecting the heart during the period of coronary grafting. There seems to be no doubt that coronary bypass can improve myocardial perfusion. The patency of aortocoronary saphenous-vein grafts has been 80 to 85 percent two years after operation. The procedure has been widely accepted for patients receiving medical therapy who have unacceptable symptoms and for certain other subsets of patients with coronary artery disease.

### 2. What constitutes a reasonable diagnostic workup before recommending medical or surgical therapy?

A reasonable diagnostic workup of a patient with angina pectoris depends on the clinical problem at issue. Instability and severity of angina, effect of the disease on the quality of life, cardiac function, and to a certain degree, age are all important in determining the workup of each patient. The workup should be done as efficiently as possible to provide definitive information on which clinical decisions can be based. Unnecessary and redundant procedures should be avoided.

In some patients the clinical picture indicates that definition of the coronary anatomy is needed to determine operability. It is agreed that patients with stable angina whose quality of life is significantly impaired by their symptoms should undergo coronary arteriography. Furthermore, in patients with unstable angina, coronary arteriography should be performed during the initial phase of hospitalization; if maximal medical therapy does not relieve symptoms, this procedure is considered urgent. There is consensus that coronary artery bypass is indicated in patients with unacceptable symptoms during appropriate medical treatment or with recurrent unstable angina, but the decision to operate must also depend on the results of invasive studies.

In patients with typical angina not sufficiently severe to dictate surgery for relief of symptoms, noninvasive cardiac testing may be carried out initially in an attempt to identify those at high risk for major cardiac events. However, there is lack of consensus on the value of noninvasive testing in the workup of such patients. Some physicians prefer coronary arteriography as the initial diagnostic procedure, particularly in the young patient. Others recommend exercise electrocardiography to identify patients with serious left main coronary artery or triple-vessel disease. Such patients will often have early or excessive ST-segment deviations, prolonged ST segment depression into the recovery period, or decrease in blood pressure during the test. In this category of patients coronary arteriography should be carried out, and if high-risk disease is found, coronary artery bypass surgery should be considered. The use of radionuclide studies to identify high-risk patients with left main coronary artery or triple-vessel disease needs further evaluation.

There is a lack of consensus on the approach to evaluation of patients with questionable or atypical angina. Exercise electrocardiography may be helpful in identifying those with serious coronary disease; such identification may be enhanced by radionuclide studies in conjunction with exercise testing, particularly in patients with resting electrocardiographic abnormalities that impair interpretation of the exercise electrocardiogram. The presence of coronary artery disease may be indicated by transient defects in myocardial perfusion, by wall motion abnormalities, or by an abnormal response of the left ventricular ejection fraction to exercise. Further research is needed to determine the role of noninvasive testing when the presence of coronary artery disease is known or suspected.

Survivors of an acute episode of myocardial infarction are at high risk of sudden death during the first year after the infarction. Recent studies have demonstrated that the one-year mortality ranges from 10 to 15 percent of all survivors. Several investigators have reported that these patients can be divided into high-risk and low-risk subgroups on the basis of clinical information and such noninvasive testing as exercise electrocardiography, radionuclide studies of ventricular function, and ambulatory 24-hour electrocardiographic recording. It is believed that high-risk patients should undergo coronary arteriography and left ventricular angiography followed by surgical intervention if the coronary anatomy and left ventricular function are appropriate. It should be recognized, however, that the course of these patients undergoing surgery may differ from that in patients with stable or unstable angina and apparently similar coronary anatomy and ventricular function, in that the former group appears to have a greater tendency toward major ventricular arrhythmia. It is also recognized that there are insufficient data to determine whether surgical intervention will reduce mortality in this special subset of patients with coronary heart disease. Because of the relatively large number of patients in this high-risk post-myocardial infarction subset and the present uncertainty about their proper management, there is an urgent need for further investigation of this problem.

The problem of the patient with coronary disease presenting with congestive heart failure needs special consideration. It is important to determine whether a lesion amenable to surgery is contributing substantially to the heart failure—e.g., a ventricular aneurysm, severe mitral incompetence, or a ventricular septal defect resulting from myocardial infarction. Two-dimensional echocardiography or radionuclide ventriculography may be helpful in the evaluation of such patients.

**3. What is known about long-term survival after coronary artery bypass surgery in specific patient groups?**

The impact of coronary artery bypass surgery on the survival of patients with coronary artery disease has been the focus of extensive debate since its introduction. Severe left ventricular dysfunction has been determined to have an adverse effect on survival, and comparisons between surgical and medical therapy must take this into account, as well as the anatomic location and extent of disease defined by coronary arteriography.

The difficulty of interpreting the results of surgical series by comparison with historical controls is well recognized. This type of comparison is especially hazardous in the assessment of coronary artery surgery because of marked differences between early and recent results for both surgically and medically treated patients. Several recently published series with long-term follow-up of patients undergoing coronary artery bypass have documented an impressively low operative mortality with a remarkable long-term survival. At the same time, other studies have noted a marked improvement in recent years in the survival of medically treated patients. Accordingly, it seems unlikely that the benefits of surgery, even in appropriately defined subgroups, can be assessed from studies that are not adequately controlled.

It is agreed that in patients with angina pectoris and more than 50 percent narrowing of the luminal diameter of the left main coronary artery, bypass surgery results in better survival than medical treatment, regardless of left ventricular function or the degree of angina pectoris. Survival rates after medical and surgical therapy were 60 and 89 percent, respectively, at four years in the Veterans Administration trial, and 67 and 89 percent, respectively, at five years in the European trial. Left main coronary artery stenosis of this severity is present in approximately 10 percent of patients undergoing coronary arteriography. (Since estimates of the prevalence of lesions based on coronary angiography depend on the criteria for angiography, considerable variability may exist among individual institutions.)

There are only a few prospective randomized trials and observational studies with concurrent medically treated controls for use in assessing the impact of surgery on survival. Furthermore, such results must be applied with caution to the overall population with symptomatic coronary artery disease treated in a variety of centers. This situation compounds the problem of judging the effects of coronary artery bypass on survival in patients with three-vessel disease, for whom conflicting data exist. Three-vessel coronary artery disease of surgical importance has been reported in 30 to 40 percent of angiographic studies. The initial report on the Veterans Administration Cooperative Randomized Trial did not demonstrate improved survival with surgery in patients with three-vessel disease, the majority of whom had moderate impairment of left ventricular function. However, if one accepts the analysis of the Veterans Administration data for the 10 hospitals (including 87 percent of the patients) in which the average operative mortality was 3.4 percent and eliminates the three outliers in which the average operative mortality was 23 percent, a substantially improved survival with surgery is observed. Evidence from some observational studies suggests improved survival in patients with three-vessel disease and moderate impairment of global left ventricular function, i.e., left ventricular ejection fraction in the range of 25 to 50 percent.

Data were reviewed that suggested improved survival after coronary artery grafting in patients with three-vessel disease and good left ventricular function, defined as left ventricular ejection fraction greater than 50 percent. The European Collaborative Randomized Trial has demonstrated improved survival for surgically treated patients in this subset. Although the differences observed in the European trial are impressive (the survival rate at 60 months was 82 percent for the medical group and 94 percent for the surgical group), there is consensus that confirmation of these findings in additional studies is needed before a firm conclusion can be reached on the question of improved survival in patients with three-vessel disease and good left ventricular function as defined above. Other smaller randomized trials and observational studies have yielded conflicting results in this subset.

The two large randomized studies examined do not provide evidence of improved survival with surgery in patients with two-vessel disease, regardless of the status of the left ventricle, but some observational studies have suggested improvement in survival with surgery of patients with two-vessel disease and moderate impairment of left ventricular function. There is no evidence of improved survival after surgery in patients with single-vessel disease, regardless of left ventricular functional status.

The available data are not considered adequate to support the conclusion of improved survival with surgery in patients with severely impaired left ventricular function, i.e., left ventricular ejection fraction less than 20 percent.

The National Heart, Lung, and Blood Institute Multicenter Randomized Unstable Angina Pectoris Trial, which excluded patients with left main coronary artery disease or persistent unstable angina, has failed to show improved survival of patients treated by urgent surgery, as compared with those treated exclusively by medical management, unless surgery was dictated by chronic symptomatology. The extent to which the results in this highly selected group of patients can be extrapolated to other patients with unstable angina has not been established.

It is important to reemphasize that surgery may still be appropriate in patient subsets in which evidence of improved survival with surgery is lacking, if symptoms of myocardial ischemia are sufficiently severe or if large areas of myocardium are in jeopardy. Further attempts should be made to identify other variables, currently unmeasured, that may affect survival and thus provide methods for more critical testing of therapeutic effectiveness.

### 4. What is known about the long-term quality of life after coronary artery bypass surgery?

There are few objective criteria by which quality of life can be assessed after coronary artery surgery. The symptom of angina pectoris is reported to be relieved in 80 to 90 percent of patients undergoing surgery for chronic stable angina. Bypass has reduced the subsequent number of cardiac-related events, the amount of medication required, and the frequency of hospitalizations. The majority of patients have been able to increase their exercise capacity and improve their New York Heart Association functional class after operation. This observation has been documented by improvements in functional exercise testing, angina threshold, left ventricular wall motion, left ventricular ejection fraction during exercise, indexes of myocardial oxygen consumption during exercise and lactate extraction across the myocardium.

Theoretically, improvements in symptoms and functional capacity associated with coronary bypass should enable more patients to resume gainful employment. The consensus is that this expectation has not been realized. It is recognized that physicians do not make consistent recommendations to patients regarding exercise potential and employability after successful coronary surgery. Factors extraneous to the patient-physician relationship, such as preoperative work status, availability of other income, perception of health, age, level of education, and employer attitudes, all appear to influence the postoperative employment status. Whether or not the patient returns to work after coronary surgery depends on too many nonmedical factors to allow any conclusions regarding efficacy of therapy based on this characteristic.

It is reported that angina will recur or progress after bypass surgery in about 5 percent of patients per year. In approximately two-thirds of these patients, symptoms are related to closure of the vein graft or progression of disease in the native circulation. This may be related to persistent elevation of blood lipids or poor control of other risk factors. The mechanisms involved in progression of atherosclerosis in the coronary circulation and in grafts are important and require further investigation.

Similar results regarding quality of life have been observed in patients undergoing coronary bypass for unstable angina, but the reported follow-up data cover a shorter period than those cited, which are based predominantly on patients with stable angina.

### 5. What is the range of success rates for the procedure in various settings, and what factors may be important in influencing this outcome?

The institutional setting in which bypass grafting is performed may have an important influence on the success of the operation in various clinical subgroups. Excellence can be achieved in a variety of hospital settings, provided that appropriate medical and technical support is available to complement an experienced and skilled surgical team. The necessary features include expertly performed angiography in suitably equipped laboratories, the availability of other subspecialty resources, and appropriate laboratory and blood-banking facilities.

Successful intraoperative management—reflected in low rates of mortality, perioperative infarction, and other postoperative complications—and short hospital convalescence will depend not only on surgical skill and judgment but also on the availability of competent anesthesiologists, efficient extracorporeal support, optimal myocardial preservation techniques, and a minimal period of myocardial ischemia consistent with optimal revascularization.

Postoperative management requires a suitable intensive-care facility, dedicated personnel and the availability of circulatory support systems.

With the experience that has been accumulated to date, the following hospital mortality and perioperative infarction rates can be expected.

In patients with chronic stable angina pectoris and normal or moderately impaired left ventricular function, a hospital mortality rate of 4 percent is generally attainable, and a rate of less than 1 percent is possible. The incidence of electrocardiographically documented perioperative infarction may approximate 5 percent.

In the syndrome of unstable angina pectoris, early results will depend on the institution's approach to management. A somewhat higher incidence of morbidity and mortality may result from earlier operative intervention, and lower risks may result from a longer period of stabilization and exclusion of patients with evolving infarctions. With initial stabilization and nonemergency operation, hospital mortality and perioperative infarction rates should approach those in patients with chronic stable angina pectoris. Even with early intervention, a hospital mortality of 6 percent is generally attainable and perioperative infarction may approximate 10 percent.

Left main coronary artery involvement has been associated with high operative risks in the past. Except under emergency conditions, patients with this lesion can be treated surgically with morbidity and mortality rates only slightly higher than those in patients with chronic stable angina and a different coronary anatomy.

Bypass grafting in patients with severe left ventricular dysfunction has been associated with high operative morbidity and mortality. Recent improvements in perioperative management have lessened the risks. In patients with very severe myocardial dysfunction—that is, ejection fractions of less than 25 percent—a hospital mortality rate no greater than 15 to 20 percent is generally achievable.

At present there is insufficient information to identify the role of bypass surgery in patients with acute myocardial infarction or intractable ventricular arrhythmias, or in asymptomatic patients with jeopardized myocardium.

For all categories of patients, an average one-year graft patency of 85 to 90 percent should be achievable. The roles of anticoagulant and antiplatelet therapy, as well as other interventions that may affect late graft patency and retard the arteriosclerotic process, are not known at present and require further study.

## Conclusion

There is consensus of the panel that coronary artery bypass represents a major advance in the treatment of patients with coronary artery disease. Evidence has been presented to support the conclusion that an improvement in the quality of life, a decrease in myocardial ischemia, and an increase in survival have been demonstrated after coronary artery bypass in selected subsets of patients.

*Sponsored by the National Heart, Lung, and Blood Institute in conjunction with the National Center for Health Care Technology and conducted with the assistance of the Office for Medical Applications of Research, Office of the Director, NIH. The Consensus Development Panel consisted of the following persons:*

Robert L. Frye, M.D. (Chairman), Chairman, Division of Cardiovascular Diseases, Mayo Clinic, Rochester, Minnesota; W. Gerald Austen, M.D., Chief of Surgical Services, Massachusetts General Hospital, Boston, Massachusetts; Paul A. Ebert, M.D., Professor and Chairman, Department of Surgery, University of California, San Francisco, California; Charles K. Francis, Jr., M.D., Assistant Professor of Medicine, Co-Director, Cardiac Catheterization Laboratory, Division of Cardiology, Yale University School of Medicine, New Haven, Connecticut; Nicholas T. Kouchoukos, M.D., Professor of Surgery, University of Alabama in Birmingham, Birmingham, Alabama; Paul Meier, Ph.D., Department of Statistics, University of Chicago, Chicago, Illinois; Hiltrud S. Mueller, M.D., Professor of Medicine and Chief of Cardiology, St. Louis University School of Medicine, St. Louis, Missouri; Elliot Rapaport, M.D., Professor of Medicine, University of California, San Francisco, San Francisco, California; T. Joseph Reeves, M.D., Director, Cardiovascular Laboratory, St. Elizabeth's Hospital, Beaumont, Texas; David C. Sabiston, Jr., M.D., Professor and Chairman, Department of Surgery, Duke University Medical Center, Durham, North Carolina; William C. Sheldon, M.D., Chairman, Department of Cardiology, Cleveland Clinic Foundation, Cleveland, Ohio; Robert L. Vitu, M.D., Saginaw, Michigan, Assistant Clinical Professor of Family Practice, College of Human Medicine, Michigan State University, East Lansing, Michigan; James H. Ware, Ph.D., Associate Professor of Biostatistics, Harvard School of Public Health, Boston, Massachusetts.

*Special participants in the discussions of the Panel included the following:*

Samuel Gorovitz, Ph.D., Chairman, Department of Philosophy, University of Maryland, College Park, Maryland; David C. Levin, M.D., Associate Professor of Radiology, Harvard Medical School, Boston, Massachusetts; William B. Stason, M.D., Associate Professor of Health Policy and Management, Harvard School of Public Health, Boston, Massachusetts.

*Symposium*

October 30-31, 1981
The Plaza Hotel
New York, N.Y.

# Grand Rounds In Medicine: RECOGNITION AND MANAGEMENT OF THROMBOEMBOLIC DISORDERS

## Symposium Objectives

The objective of this symposium is to provide clinically relevant information to aid the practicing physician in the recognition of patients with thromboembolic disorders and proper patient selection for the use of anticoagulant or antiplatelet therapy. Panel discussions will focus on actual case histories representative of management problems confronting the physician in private practice.

## Symposium Co-Chairmen

**Richard Gorlin, MD**
Murray M. Rosenberg Professor
Chairman, Department of Medicine
Mount Sinai School of Medicine
Physician-in-Chief
The Mount Sinai Hospital
New York, New York

**Louis M. Aledort, MD**
Professor of Medicine
Vice Chairman, Department of Medicine
Mount Sinai School of Medicine
New York, New York

## Symposium Accreditation:

As an organization accredited for continuing medical education, The Page and William Black Post-Graduate School of Medicine of the Mount Sinai School of Medicine (CUNY) certifies that this continuing medical education offering meets the criteria for ten (10) credit hours in Category I of the Physician's Recognition Award of the American Medical Association, provided it is used and completed as designed.

## Registration

For additional information and registration, call Ms. Jayne Gross at 800-223-8978/9 outside of New York State or 212-752-4530 in New York State.

# Scientific Fraud and Scientific Ethics

DEENA WEINSTEIN

There is no dearth of instances of fraud in contemporary science, but their significance is rarely analyzed. A researcher admitted to faking the data on tests of drugs and claimed that the real data were lost in an accident in a rowboat at a picnic.[1] The so-called Painted Mice Affair of the 1970s involved a Sloan-Kettering scientist's unsuccessful attempts at grafting skin from black mice onto white mice. To make up for his failures the scientist used a black felt-tipped pen and painted two of the mice with it, showing them to his supervisor as evidence of successful grafts.[2] Within the past five years the Food and Drug Administration has caught thirty researchers who were falsifying data.[3] A biochemist at the Max Planck Institute in West Germany admitted that he "invented" the data which were published in various articles in the journal *Nature* and elsewhere on cyclic GMP in neuroblastoma cells. He stated: "I published my hypotheses rather than experimentally determined results. The reason was that I was so convinced of my ideas that I simply put them down on paper."[4] Similar sentiments would probably be voiced if the eminent psychologist Cyril Burt could be persuaded to confess from the grave. The data he published for decades in support of his strongly-held view that the basis of intelligence is hereditary have now been exposed as fraudulent by various psychologists who independently examined his work.[5]

Instances of fraud in science differ in significance from cases of fraud in other areas of society. It is only the institution of science for which the pursuit of truth is the dominant value.[6] In other sectors of society truth subserves other values such as profit, love, order, or justice. The aim of the discussion to follow is to understand the phenomenon of fraud in science in the light of the ethics of science and to assess the effects of knowledge of scientific fraud on both the institution of science and on the larger society.

Cases of fraudulent scientific work attest to the inadequacy of the professional ethic of science to guide the behavior of practitioners. The extent of fraud in any area is difficult even to estimate. Are the cases of scientific fraud that have come to light a significant proportion of all such instances or are they merely the tip of an iceberg? The British journal *New Scientist* attempted to answer the question just raised. They asked their scientist subscribers to submit an anonymous questionnaire. The results are merely suggestive since the method used was hardly rigorous. Nonetheless, 92% of the respondents had knowledge of "intentional bias" in science and more than half of these came by their information through direct contact.

The effectiveness of the scientific ethic has traditionally been understood in terms of two separate, though related, approaches. One approach focuses on the individual and understands the commitment to a scientific ethic as a secularized calling or vocation. The most well-known proponent of this view is the German social theorist Max Weber. The other perspective, functionalism, grounds the ethic of science in the scientific community, not the individual practitioner. It is the corporate group of scientists who both reward one another and police violations of the ethical code that guarantees scientific integrity. This collectivist perspective is associated with the work of Weber's French contemporary Emile Durkheim and especially with the work of the American sociologist Robert Merton and his students.

Both of the views sketched above concur on the content of the professional ethic of the scientist, which is comprised essentially in placing the value of truth above all other values. Truth, or less ambitiously knowledge, is to be obtained as an end-in-itself: knowledge for its own sake is sought. Weber details the fall from the ethic of science when knowledge is sought not as an end-in-itself but as a means to come other ultimate value such as technological improvement, knowledge of God through His works, or fame.[8] The true scientist is the one who has a "passionate devotion" to the vocation which makes knowledge the ultimate

---

DEENA WEINSTEIN, Professor of Sociology, DePaul University, Chicago, IL.

This paper was presented at the May 5, 1981 Seminar of the Center for the Study of Ethics in the Professions (Illinois Institute of Technology, Chicago, IL).

value and who pursues this end with hard work and intelligence.

The collectivist perspective eschews reliance on individual commitment to an ethic framed in vocational terms. Instead a community of practitioners enforces a set of norms to govern the activities of its members. Merton's work elaborates on four basic norms which he defines as the ethos of science and which optimize the conditions for obtaining scientific truth or what he calls "certified knowledge." The four norms are 1) universalism - the injunction to judge knowledge independently of any attributes of the claimant, 2) communality - the order to avoid secrecy and to make all information public, 3) organized scepticism - the prescription to take a critical stance towards all research findings, and 4) disinterestedness - the admonition to pursue one's research without regard for any possible self-interest.[9] Merton claimed, forty years ago, that the operation of these four norms had prevented fraud in science because of the "exacting scrutiny of fellow-experts"; that scientific work is "subject to rigorous policing, to a degree perhaps unparalleled in any other field of activity."[10]

In order for fraud in science to occur, either the Weberian assumption of people holding to the vocation of science, and/or the Mertonian assumptions concerning the norm-enforcing activities of the scientific community must be unfounded. It is the contention of the present discussion that the conditions that would allow for the validity of both of these sets of assumptions have become less and less prevalent. Despite formidable barriers to knowing the extent of scientific fraud one presumes that its incidence is increasing in proportion to the decline in the strength of both vocational commitment and scientific community. Both of the above mechanisms of grounding the scientific ethic have been impaired, particularly since World War II. An understanding of how these weaknesses have developed comprehends how fraud can be perpetrated and often go undetected, and why some individuals would want to commit fraudulent actions.

---

The possibility of holding to vocational commitment to knowledge for its own sake is diminished when one is constrained in one's choice of research topics. The classical scientist supported by family wealth was replaced in the late nineteenth century by the scientist who exchanged his labor of teaching for relatively unhampered free research in the university. The rise, especially after World War II, of "Big Science" (research requiring large funding from governmental agencies or from private corporations) removes much of the scientist's freedom to pursue the truth that interests him or her. It is hardly news to note that "scientists are tending to select areas of research where money is available."[11] Much research is done by groups, generally with a division of labor and hierarchy of authority. The bureaucratization of scientific endeavors engenders the same types of alienation which are found in other large-scale organizations. The sabotage of the automobile assembly-line worker who slips a banana peel behind the dashboard he is installing is no different from that of the lab assistant who adds a known poison to the food of the experimental rats, or that of the social science assistant who fills in the interview schedule at the beach with friends instead of eliciting responses from the scientifically selected sample.

Organization-based science leaves little room for the scientists not to "produce." One's career, in terms of promotion, new research grants, doctoral degree, salary increments, or mere employment, depends upon results. It is increasingly difficult to maintain any disinterest in one's results if one's livelihood is dependent on successful outcomes. The pressure to succeed is exacerbated in a society in which vulgar pragmatism dominates. To paraphrase the sage of Green Bay, Vince Lombardi, "Success isn't everything, it's the only thing." The very notion of a vocation is, of course, antithetical to any concern with success. A recent book examines a scientist with a vocation that Weber would surely call authentic.[12] After many months of tedious work the scientist concluded that her original idea was verified. It was at that time that self-doubt became most acute and oppressive. Yet the scientist resisted her desire "to jump, to anticipate data, to publish, to tell, before the actual hard facts stand up." She thinks, however, of her commitment to the vocation of science as a rarity: "Everywhere in science the talk is of winners, patents, pressures, money, no money, the rat race . . . I no longer know whether I can be classified as a modern scientist or as an example of a beast on the way to extinction."

The ability of the scientific community to police itself has also diminished. Insofar as individual scientists are directly accountable to grant-administrators or corporation-executives their very membership in a scientific community is in question. Their "significant others" are not other scientists, and the approval (or disapproval) of scientific peers is a devalued currency. The highly-touted policing mechanisms of peer review and replication are of doubtful effectiveness. Funding agencies are increasingly reluctant to allow publication of results either because they wish to thwart competing organizations or because of real or imagined national security considerations. For various other reasons many scientists are not readily forthcoming in sharing their data with others.[13] Replicating another scientist's research is increasingly less likely to occur because of greater specialization (fewer people have the competence to replicate), no desire on the parts of funding agencies to support research which is "merely" replicative, and the lack of recognition that one can expect from spending time on replication research. Science writer Daniel Greenberg concludes: "Replication, that much touted check on scientific authenticity, is relatively rare."[14]

Fraud perpetrated by scientists is a crime within the scientific community. P.B. Medawar, for example, declares that "any kind of falsification or fiddling with professedly factual results is rightly regarded as an unforgiveable professional crime."[15] Many criminological theories assert that crime begets more crime unless the criminal is apprehended and publicly punished. Reasons why fraud is rarely discovered have already been discussed. Of those offenders who are caught apparently a majority are not read out of science: one source claims that 80% of those admitting to cheating continue to do their work.[16] Research institutes generally would not want to damage their reputations by making public the actions of one of their scientists who was caught committing fraud. In sum, the scientific community has become so permeable to the dominant institutions of the rest of the society and to their values that it is doubtful that one should call it a community at all. The ability to produce certified knowledge was based on a sharp separation of science from society. But as we have seen the wall of separation has not only been breached but has been battered down.

---

The grounds for the ethic of science based on Weberian or Mertonian considerations are being eroded and with them the barriers to scientific fraud. The effects of fraud in science are profound and, like a pebble dropped into a pool of water, have a ripple effect upon a number of areas in modern life. The most obvious effects of fraud are its consequences for the institution of science itself. If scientists must be concerned about the validity of the conclusions on which their own research rests they may need to replicate prior work (a great inefficiency) or to live with an endemic doubt and anxiety. Disclosure of fraud has not gone unnoticed by scientists themselves and in some quarters there have been efforts made to shore up the crumbling policing mechanisms. For example, some journals require authors to "sign a declaration that their data will be available for consultation for 5 years after publication."[17] Knowledge that others have committed fraud and that some have "gotten away with it" may lead to that sense of normlessness that Durkheim called "anomie," the feeling that one does not know what it is right to do. Further, funding agencies may be more reluctant to support research or may impose numerous regulations that decrease the scientists' creativity and efficiency. Blissett notes that when the "rules of the game" are violated the group's cohesion is weakened and its status and power in the larger society is diminished.[18]

Beyond its effects on science itself fraud has profound consequences throughout social life because most of the other vital institutions of society are practically dependent on science. The justice system relies on scientific expertise to determine, for example, the sanity of defendants or the effects of segregated schools (eg., Coleman's report cited in the Supreme Court's 1954 Brown Desegregation decision). Legislatures hear scientific testimony to help determine or justify new legislation, as in the 1981 abortion hearings in Congress where scientists were called upon to state when human life begins. Businesses use scientists to develop new products and the military-industrial complex, identified by President Eisenhower, uses scientists to generate new weaponry. And, at least before President Reagan's deregulation campaign, government regulatory agencies utilized scientists to protect the health and safety of workers, consumers, and the general public. The above is, of course, only a small sampling of the ways in which the institutions of American society are dependent upon science.

A deeper and more significant consequence of fraud in science involves the symbolic importance of science in contemporary society. Many social theorists, including Max Weber, Pitirim Sorokin, John Dewey, Herbert Marcuse, and Georg Simmel, among many others, have agreed that the modern world accepts science as the basis of all truth and value, and thus replaces religion as the fundamental social institution. Learning that the very foundation of society is corrupt, which is the effect of making scientific fraud public, is unsettling at best. One can understand Martin Luther's fundamentalist attack on the Catholic Church as a reaction of its corruption. The rise of a reactionary fundamentalism in the 1970s and 1980s (witness not only the appearance of the Moral Majority, but the relative increase of membership in fundamentalist churches and cults, the increasing rejection of "evolution" in favor of "creationist" beliefs about the orgins of life, the popularity of astrology, and widespread belief in the devil) indicates in some sense a collapse of the struts supporting modernity. Certainly scientific fraud cannot be held strictly accountable for contemporary reaction and, of course, the reactionary climate is in part responsible for some of the fraud itself.

---

The social theorists cited above argued not only that science was the basis of truth and value in the modern world, but that professional ethics were prime ingredients in the social glue that was to hold society together. Premodern society was held together by common beliefs that were enforced by the whole community, what Durkheim termed the collective consciousness.

The political and religious orders were one: truth and goodness were intertwined and thoroughly permeated all who belonged to the society. The Enlightenment represented the beginning of a new order based on reason, not on religious revelation. The new formula was probably beginning to unravel around the turn of the twentieth century, just at the time when social theorists were trying to explain how it works. "Science, it was found, cannot provide the purposes for which human beings act, but only statements of how things occur which can sometimes be transformed into technical rules for how to perform actions more efficiently." The division of labor was one consequence of a scientific society and the concommitant differentiation of individuals in the society eliminated the common norms and values that were the basis of social solidarity. The new social order could no longer be held together by common norms and values: each differentiated group (occupation) would have its own special norms and values which would be self-enforced, either collectively through Durkheimian guilds or individually through Weberian vocations.

Fraud in science demonstrates that the new glue does not work. Abscammed and Watergated politicians, malpracticing MDs, child-abusing parents, barely literate teachers and anti-intellectual professors, biassed judges, and a host of other distressing behaviors provide a wider context in which fraud in science can be comprehended. Taken together, they demonstrate that the "modern" solution to society, self-restraint and commitment to values beyond self-interest, is not working.

## REFERENCES

The author wishes to thank the following people for their helpful comments and suggestions: Mark S. Frankel, Frances Price, John Wakeford, Walter Hirsch and especially Michael A. Weinstein. For an analysis of other aspects of the topic of fraud in science see: Deena Weinstein, "Fraud in Science," Social Science Quarterly 59, #4 (March 1979):639-652.

1. Philip J Hilts: Lab scandal: Phony cancer data Chicago Sun-Times, 38; February 18, 1981
2. Barbara J. Culliton: The Sloan-Kettering Affair (II): An Uneasy Resolution, Science 184:1154-1157, 1974
3. Hilts, op. cit.
4. NA, Researcher admits he faked journal data, Science News 111, 10, 150-151, 1977
5. Virginia Makins, The strange case of Cyril Burt . . . and his lost papers The Times Educational Supplment October 29, 1976
6. It is assumed here that when "truth" is designated as the dominant value of science that the term refers to a veracious conduct of inquiry and not to a product or object (eg. "the truth"). If the value of science were some set of cognitive objects, then it would be conceivable for a scientist in certain cases to promote the truth by certain judicious frauds which might, for example, encourage further inquiry. The norms of science do not permit such calculations but instead demand honesty throughout the process of truth-seeking.
7. Ian St. James-Roberts: Cheating in Science, New Scientist 466-469,1976
8. Max Weber: Science as a Vocation. HH Gerth, C Wright Mills, eds., From Max Weber:Essays In Sociology, 129-156.New York: Oxford University Press, 1946 ,originally published in 1919
9. Robert K. Merton: Science and the Democratic Social Structure Social Theory and Social Structure 604-615 New York: Free Press, 1968, originally published in 1942. For a further discussion of the norm of disinterestedness, see: Deena Weinstein, Determinants of Problem Choice in Scientific Research, Sociological Symposium 16:13-23, Summer, 1976
10. Merton, op cit, 613
11. Elie A. Shneour: Science: Too Much Accountability.Science 195:939, 1977
12. June Goodfield: An Imagined World: A Story Of Scientific Discovery. New York;Harper and Row,1981
13. Boyce Rensberger: Fraud in Research is a Rising Problem in Science. New York Times 1:44, 1977
14. Daniel S. Greenberg: Hanky-panky in the hallowed halls of science. New York Daily News, 47, August 28, 1980
15. PB Medawar: Science and the Patchwork Mouse. Science News 109:335, 1976
16. Thomas von Randow: Quack Flies Through Science. Die Zeit (trans.) 20, March 11, 1977
17. St. James-Roberts, op cit, 469
18. Marlan Blissett: Politics In Science Boston. Little Brown, 68, 1972

# Legislative Inertia on Nontreatment Legislation

## A Function of Oppositional Interest Group Hegemony

SENATOR LOUIS P. BERTONAZZI

Legislation regarding nontreatment decisions in Massachusetts currently focuses on proposals for the so-called living will which have the objectives of enabling the patient, in the event of incapacity to refuse heroic treatment at the time of imminent death, to do so beforehand in a document of approved legal form, and to provide immunity from liability for the physicians who cooperate with the directives of such document.

The present legislative session is considering two bills on nontreatment, both of the living-will genre. These proposed laws have no serious chance of enactment, despite the fact that generally, in Massachusetts, there exists a great deal of concern, indeed, a certain amount of turmoil, about the question of nontreatment decision-making. The fact is at this time all real movement regarding such legislation is at a virtual standstill. Such a phenomenon regarding issues of public import, while not unusual, is generally not understood by "outsiders" to the political process who often assume that such matters, fueled by public concern and interest, will proceed on their merits through rational advancement to a logical conclusion reflective of some public consensus. Actually, legislators rarely have a clear and definitive assessment of public opinion regarding such a matter as nontreatment. Even public opinion polls and referenda questions,were they to be exercised here, would be heavily dependent for their results on the manner and technique of posing the question. Rather, legislative decision-making is generally more dependent on (and susceptible to) the lobbying efforts of well-organized interest groups, which are potent through the fruits of their organization: information, money, access to the public through media, and their resultant power to punish or reward legislators. In this respect, it is important to understand that the voting public in Massachusetts organizes to punish or reward legislators only every two years at the polls, while a well-organized interest group can bring what contingencies it owns to bear on even a daily basis. Therefore, the interest group possesses the capacity to impose a much richer schedule of punishment or reinforcement with some degree of specificity, while the general public's schedule is comparatively thin, and, as a rule, non-contingent on legislative behavior. Clearly, the interest group, organized, financed, and motivated around specific issues, is a more powerful vehicle for influence than an amorphous voting public. Skinner's comment relating to group (society) and controlling agency (government) might well be extended to include the same relativity of organization between legislature and interest group:

> The group exercises ethical control over each of its members through its power to reinforce or punish. The power is derived from sheer number and from the importance of other people in the life of each member. Usually, the group is not well organized, nor are its practices consistently sustained. Within the group, however, certain *controlling agencies* manipulate particular sets of variables. These agencies are often better organized than is the group as a whole, and they often operate with greater success.[1]

This is not to say, however, that legislators are incapable of sensing issues which generate concern and interest in the public at large. The question is one of specificity about ethical concerns, and the creation of that specificity in a legislator's constituency may be broached by anyone with the motivation and means to do so, the legislator as an individual, the press, an already established institution, *or,* an organized interest group. On occasion, these will compete in the creation of specific public opinion, and the voters will become the recipients of a plethora of information, opinions, appeals to authority and the like.

More often than not, however, the public at large is by-passed, and is left with its broad, unspecified concern regarding a particular issue. When this is the case, the interest groups, without bothering to create specific opinion in the general constituency, nonetheless behave *as if* they have (or can), and proceed on that basis to influence legislative behavior, utilizing their immediate day to day contingencies, backed by the

---

LOUIS P. BERTONAZZI is a Massachusetts State Senator. This paper was presented before the Conference on Dilemmas of Dying, April 28, 1979, Museum of Science, Boston, MA. (Auspices of Medicine in the Public Interest).

Reprinted with permission of the publishers, *Dilemmas of Dying,* G.K. Hall & Co., Boston, 1980.

most potent one, that of creating a specific attitude in the constituency which will be translated into rewarding or punishing votes on election day.

In the matter of nontreatment - and the present issue in Massachusetts, living-wills - the general public's concern and interest is yet unspecified. There has been, nonetheless, activity to influence legislation on the part of interest groups. The result of that activity has been the present standstill regarding nontreatment in Massachusetts.

To understand why, one needs to view the situation from two perspectives—one historical, that is, the approach to "right to die" and its context as they have developed in Massachusetts; and the other functional, that is, the specific organizations, structures, and processes extant formally and informally for enactment of law in the Massachusetts legislature.

Historically, nontreatment and right-to-die reached the point of serious discussion in the Massachusetts legislature during the 1978 legislative session, approximately concurrent with consideration of medical malpractice insurance. Other states were seeing drastic increases in malpractice premiums, and local physicians feared similar increases here unless prophylactic legislation were enacted. Physicians opined that attorneys' practices were the root-cause of the problem, while the legal profession expressed the opinion that there was need for improvement in patient care by physicians. Both professional groups complained that insurance underwriters were being less than candid in exposition of the money and risk-issues arising out of the situation. Then, too, hospital administrations registered their obvious concerns, also having a stake in determination of liability.

Discussion of the malpractice situation naturally led to broader consideration of the whole issue of professional responsibility. Although the Massachusetts legislature at this point produced some reasonable first-step legislation dealing with malpractice, which established some bounds for the problem, issues regarding the dilemnas of dying had come to the fore through the discussion, no doubt intensified and sharpened by the aftermath of *In re Quinlan* in New Jersey and *Superintendent of Belchertown State School and Another v. Joseph Saikewicz* in Massachusetts, both in 1976. The national press was also active in the time 1976 - 78, with *Newsweek* printing its extensive examination of death with dignity, "Living with Dying," May 1, 1978, relying heavily on interviews with hospice advocates and the work of psychiatrist Elizabeth Kubler-Ross. The public as a whole was well aware at this time of the issue as a matter of some concern, and this concern was fundamental to crystalization into serious legislative discussion in 1978, triggered initially by the malpractice issue.

The malpractice issue is important here in another respect, since when the dying dilemma situation reached the serious discussion point, significant interest groups—representing physicians, lawyers, and hospitals—were at work in the legislative field, called out initially by this matter. In Massachusetts these groups are represented by organizations, respectively, the Massachusetts Medical Society, the Massachusetts Bar Association, and the Massachusetts Hospital Association.

None, however, had a definitive and comprehensive legislative program for nontreatment decision-making, although all registered a sense (reminiscent of the unfocused and broad public concern) that responsibility in the area needed procedural definition. Such, however, is never adequate to evoke and sustain serious legislative behavior. Concerning issues such as nontreatment, the legislature is always passive and inactive, absent (1) a well-defined proposal and (2) an organized effort to impose contingencies which reinforce or punish legislative behavior or the lack of it. The Massachusetts Medical Society and the Massachusetts Hospital Association did sponsor legislation around the issue of incompetence to refuse medical treatment, but withdrew support when a court decision was handed down in favor of their position.

In short, the situation in 1978 was this: Broad public concern with nontreatment decision-making, an undefined but vocalized sense by the interest groups representing physicians, lawyers, and hospitals that responsibility in nontreatment required procedural definition, but none committed to a definitive legislative program to the extent of exercising their considerable influence with the legislature. The malpractice issue had brought these groups to the legislature, but there seemed to be a reluctance to deal beyond this with the nontreatment corollary in a more than general way of discussion and tentative legislative initiatives.

On June 20, 1977, the U.S. Supreme Court handed down a decision which was to result in the heightened presence of another major interest group in the Massachusetts legislative arena. This was the decision in *Maher v. Rowe,* which established that the equal protection clause of the U.S. Constitution did not require states to expend monies through welfare payments for abortions, and that such expenditures were the perogative of the states through democratic process, meaning decision-making in the legislatures. There followed in Massachusetts a prolonged and hard-fought legislative battle, culminating in victory for the abortion opponents with passage of the Doyle-Flynn amendment July 8, 1978, which prohibited use of welfare funds and state employee health plans for abortions.

The adoption of Doyle-Flynn was tremendously significant. Those familiar with Massachusetts politics know that, as a result of the abortion issue, the major right-to-life group here—Massachusetts Citizens for Life, Inc.—has had the strongest impact on legislation and legislators of any single interest group established in recent years. This organization, which began as an *ad hoc* group to oppose abortion referenda questions in 1972, was incorporated in 1973, and to date has established 89 chapters across the state, according to its present president. The group sends information to a mailing list of some 60,000 members and interested persons.

The Massachusetts Medical Society has a membership of 9,813 organized into 21 district societies. The Massachusetts Bar Association has 10,910 members, while Massachusetts Hospital Association represents some 180 institutions.

At present, the Massachusetts Medical Society, the Massachusetts Bar Association, and the Massachusetts Hospital Association do not have positions as organizations on nontreatment decision-making beyond present practices which arise out of common law, although their concern for the establishment of some procedural methodology is evident in discussions by their legislative representatives. The Massachusetts Citizens for Life organization, on the other hand, presents a very definite position on nontreatment: strenuous opposition to living-wills or any legislation that "would give the members of the medical profession legal immunity for any action taken after the patient was declared terminal"[2]

MCFL further relates living-will legislation to the euthanasia issue, a relationship cited by former MCFL President Katherine P. Healey as already made by the Concern for Dying organization in an October 3, 1978, letter from the latter group's executive director. "It is this close relationship which has prompted many to see the living will as the first step towards the ultimate legalization of euthanasia, which is currently classified as homicide,"[3] said Mrs. Healy.

The interest of the medical, hospital, and legal professions in the issue, objectively examining their efforts to date in the legislature, is broad, undefined, and, in a sense, peripheral. The interest of Massachusetts Citizens for Life is direct, well-defined, and unequivocal. Why this is so suggests some important lines of scholarly investigation concerning motivation, decision-making, leadership makeup, and membership of these organized groups. What is clear now, however, is that Massachusetts Citizens for Life, richly reinforced and highly motivated from its stunning success in opposition to abortion, has clear and present ascendency of the nontreatment/living will issue among interest groups at work in the Massachusetts legislature.

Given the structure of the legislature, formal and informal, this has resulted in current legislative standstill on nontreatment/living will, since it is the interest group, armed with research, well-defined proposals, day-to-day presence in legislators' offices and committee hearings, and imposing conditions specifically contingent on legislative behavior, which produces action (or inaction). A bill in the present legislative session, for example, initiated by a private citizen and calling for state income tax deductions for blood donors, died in committee, mostly due to the opposing efforts of the American Red Cross, the acknowledged "owner" of the issues relating to blood donation. On the other hand, ARC was unable to prevent passage of legislation allowing certain commercial enterprises to establish blood collection services; the lobbying efforts of the enterprises were more effective. The point here is that the structure is not geared to a rational exposition of the issue, but to the push and pull of interest groups who operate in a legislature which, regarding issues, is essentially *tabula rasa* with only minor exceptions, and unless legislators' constituencies have made their positions highly specific and are overwhelmingly polarized.

It is clear, therefore, that the future for nontreatment/living-will legislation in Massachusetts is negative if the present situation continues. What would be required to change this is the emergence of new interest groups in favor or its adoption by one or more already established. These groups would then have to follow one or two courses: (1) a massive, day-to-day effort in the legislature, utilizing all the tools that such groups have at their disposal; (2) a massive effort to polarize legislators' constituencies into specific behaviors indicative of approval. The ethical rightness or wrongness of the matter is insufficient to produce action, and the advantage is to those who desire the present situation.

## REFERENCES

1. Skinner BF: Science and Human Behavior. The Free Press, New York: 333, 1978
2. Letter from Massachusetts Citizens for Life, Inc., to members, Massachusetts House of Representatives, April 30, 1979.
3. Letter from Katherine P. Healy, then president, Massachusetts Citizens for Life, Inc., to members, Joint Committee on the Judiciary, Massachusetts General Court, October 3, 1978.

### Books

Ferster, C.B., Stuart Culbertson, and Mary Carol Perrott Boren. *Behavior Principles*, 2nd edition. Prentice-Hall, Inc. (Englewood Cliffs, N.J.:1975).

Skinner, B.F. *Science and Human Behavior.* The Free Press. (New York: 1953).

### Monographs

Horan, Dennis J. "Euthanasia and Brain Death: Ethical and Legal Considerations" in *Studies in Law and Medicine,* 1, Americans United for Life, Inc., (Chicago: 1977).

Horan, Dennis J. and Thomas J. Marzen. "Death with Dignity and the 'Living Will'," *Studies in Law and Medicine,* 4, Americans United for Life, Inc., (Chicago: 1978).

### Articles

"Living with Dying," *Newsweek,* May 1, 1978.

### Letters

Letter from Katherine P. Healy, then president, Massachusetts Citizens for Life, Inc., to members, Joint Committee on the Judiciary, Massachusetts General Court, October 3, 1978.

Letter from Massachusetts Citizens for Life, Inc., to members, Massachusetts House of Representatives, April 30, 1979.

NYU MEDICAL CENTER
POST-GRADUATE MEDICAL SCHOOL

*announces*

# INTERNAL MEDICINE BOARD REVIEW

**Wednesdays, 4:00 to 7:00 p.m.** **January 6 to June 23, 1982**
**(No Session April 7th)**

## COURSE DIRECTORS:

Saul J. Farber, M.D.
Frederick H. King, *Professor of Internal Medicine and Chairman,*
*Department of Medicine*

Louis Shenkman, M.D.
*Associate Professor of Medicine*

Mitchell H. Charap, M.D.
*Instructor in Medicine*

## COURSE DESCRIPTION

An improved method by which to prepare for either board certification or recertification in medicine. In an attempt to provide more effective retention of cognitive material, the Post-Graduate Medical School has spread the basic and clinical information over a six-month time span with weekly three-hour sessions running from January through June 1982.

Each teaching session is divided into two parts: 1) a brief summary lecture emphasizing the essential and relevant status of the area under discussion and 2) a self-assessment examination workshop based on questions found on certification and recertification examinations providing responses with explanations of appropriate and inappropriate answers. A principle goal of the course is to provide the *reasoning* behind the identification of responses to questions. At each session written material pertinent to the following week's subject will be distributed to the registrants.

## PROGRAM TOPICS

Cardiology
Hematology
Infectious Diseases
Skeletal Diseases
Diabetes
Hypertension
Neoplastic Diseases
Dermatology
Gastroenterology
Neurology
Pulmonary Diseases
Endocrinology
Clinical Immunology
Nephrology

## FACULTY

Francis V. Adams
Steven B. Abramson
Bertrand Agus
Edward L. Amorosi
Manfred Blum
Ronald Blum
Morton A. Bosniak
Mitchell H. Charap
Paul G. Deutsch
Martin Dolgin
Frederick Feit
Martin S. Finkelstein
Michael L. Freedman
Arthur C. Fox
Stuart M. Garay
Ephraim Glassman
Roberta M. Goldring
Melvin C. Gluck
Loren W. Greene
H. William Harris
Charles G. Hazzi
Charles S. Hollander
Robert S. Holzman
Lawrence Horowitz
Martin L. Kahn
Thomas G. Kantor
Irving Karten
Lois A. Katz
David L. Kleinberg
Itzhak Kronzon
Mark H. Levin
Richard I. Levin
Jerome Lowenstein
Bruce J. Mack
Andrew M. Milano
Hal J. Mitnick
Franco M. Muggia
Valerie H. Peck
Robert A. Press
Marie Pulini
James J. Rahal, Jr.
David Ramsay
Bruce G. Raphael
David M. Rapoport
Stephen B. Richardson
Michael F. Schloss
Robert Silber
Michael S. Simberkoff
Stephen A. Smiles
James L. Speyer
Robert J. Spiegel
Norton Spritz
Paul A. Tunick
Fred T. Valentine
James C. Wernz
Stanford Wessler
Howard E. Winer

**FEE: $665** **ACCREDITATION: 72 AMA Category I Credit Hours**

**Preregistration Form** **Course #302 INTERNAL MEDICINE BOARD REVIEW** **Please Print or Type**

Name ______________________ Telephone No. (        ) ______________________

Address ____________________________________________
No. & Street City State Zip Code

**Return with check payable to NYU Post Graduate Medical School**
**to:** Registration Department, NYU Post-Graduate Medical School
Room 4-37-N LHB, 550 First Avenue, New York, N.Y. 10016
(212) 340-5295 (24-hour telephone)

☐ I need hotel information

**ct10/81**

# Hysterectomy in Women Aged 15-44, United States, 1970 - 1978

CENTER FOR DISEASE CONTROL

H.E.W., Public Health Service, Atlanta, GA.

In the United States in the period 1970 - 1978, an estimated 3,536,000 women aged 15-44 had hysterectomies (excluding radical procedures), making hysterectomy the fourth most frequently performed operation for women in this age group.* Summarized below, in the first of a series of articles on this subject, are epidemiologic and demographic features of women aged 15-44 having hysterectomies in the United States. These data suggest that medical practice varies considerably by region with respect to hysterectomy in reproductive-aged women.

From 1970 to 1973, the number of hysterectomies performed on women in this age group increased from 306,000 to 413,000; from 1974 to 1978, the annual number of such procedures remained nearly constant, with 403,000 to 442,000 procedures per year (Figure 1). The hysterectomy rate during the entire 9-year period averaged 8.7 per 1,000 women aged 15-44, ranging from 7.2 in 1970 to 9.1 in 1975 (Table 1).

Hysterectomy rates increased with increasing age (Table 1). Women under 25 demonstrated rates of about 1 per 1,000 women throughout the study interval. In contrast, 35 to 44-year-old women consistently had the highest hysterectomy rates. Annually since 1972, nearly 2% of women aged 35-44 underwent hysterectomy.

On the average, reproductive-aged women were 35.1 years old at the time of hysterectomy. There were considerable differences in the region-specific mean ages at the time of hysterectomy even when adjusted for race and marital status. Women in the South had the lowest mean age (34.2) at the time of hysterectomy; women in the Northeast had the highest (37.0).

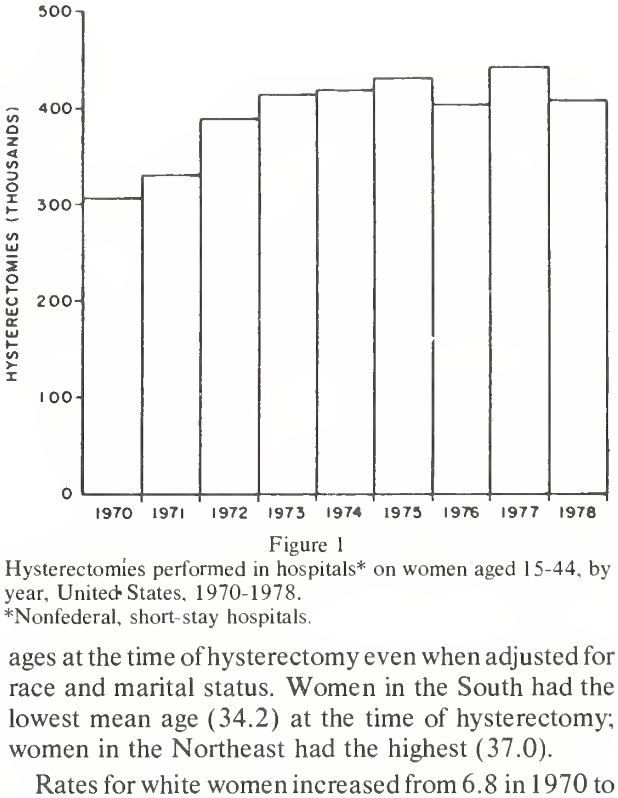


Figure 1
Hysterectomies performed in hospitals* on women aged 15-44, by year, United States, 1970-1978.
*Nonfederal, short-stay hospitals.

Rates for white women increased from 6.8 in 1970 to 9.0 in 1973 and remained fairly stable thereafter. In contast, rates for women of black and other races ranged from 8.9 to 10.1 during the entire 9-year period (Table 1).

Women in the South consistently had the highest hysterectomy rates in the country, while women in the Northeast had the lowest rates (Table 1). Annually between 1975 and 1978, the rates of hysterectomy in the South for reproductive-aged women were more than twice those in the Northeast.

A relatively constant proportion of hysterectomies during the 9-year interval were performed by the

---

*Following elective abortion, diagnostic D & C, and tubal sterilization. Estimates of the number of hysterectomies performed on women aged 15-44 were derived from data collected annually in the National Hospital Discharge Survey, conducted by the National Center for Health Statistics (NCHS) (*1*). Rate estimates are conservative because the denominator each year did not exclude women who had previous hysterectomies.

MORBIDITY AND MORTALITY WEEKLY REPORT, April 24, 1981, Vol. 30, No. 15.

Table 1

HYSTERECTOMY RATES FOR WOMEN AGED 15 - 44 BY AGE, RACE, AND GEOGRAPHIC REGION, UNITED STATES, 1970 THROUGH 1978

| | Rate* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Characteristics* | *1970* | *1971* | *1972* | *1973* | *1974* | *1975* | *1976* | *1977* | *1978* |
| Age | | | | | | | | | |
| 15-24 | 0.7 | 0.8 | 1.1 | 0.9 | 1.1 | 1.0 | 1.0 | 1.3 | 1.0 |
| 25-34 | 8.4 | 9.0 | 11.0 | 11.4 | 10.1 | 11.4 | 10.3 | 11.3 | 9.4 |
| 35-44 | 15.6 | 16.6 | 18.4 | 19.5 | 20.5 | 19.9 | 18.3 | 18.8 | 17.7 |
| Race | | | | | | | | | |
| White | 6.8 | 7.4 | 8.7 | 9.0 | 8.9 | 9.0 | 8.1 | 8.9 | 7.8 |
| Black and other races | 9.8 | 8.9 | 9.3 | 9.7 | 9.1 | 10.1 | 10.0 | 9.5 | 9.7 |
| Geographic region | | | | | | | | | |
| Northeast | 6.2 | 6.7 | 6.3 | 6.7 | 5.7 | 5.0 | 5.0 | 5.2 | 4.4 |
| North Central | 7.1 | 7.4 | 7.8 | 8.5 | 9.1 | 9.1 | 8.4 | 8.6 | 8.3 |
| South | 8.2 | 8.5 | 11.5 | 11.2 | 11.1 | 11.7 | 11.1 | 11.8 | 11.0 |
| West | 6.9 | 7.7 | 8.8 | 9.2 | 9.2 | 8.9 | 7.6 | 9.2 | 6.9 |
| TOTAL | 7.2 | 7.6 | 8.8 | 9.1 | 9.0 | 9.1 | 8.4 | 9.0 | 8.1 |

*per 1,000 women aged 15-44.

vaginal approach (ranging from 25.4% to 29.2%); nevertheless, there were considerable regional differences (Figure 2). Women in the Northeast had the lowest proportion of hysterectomies performed as vaginal procedures while women in the West, since 1973, annually had the highest proportion of vaginal hysterectomies. In the 3-year period 1976-1978, approximately 34% of hysterectomies performed in the West were vaginal procedures compared with 19% in the Northeast.

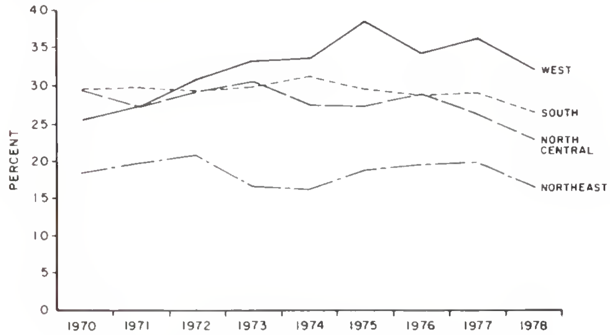


Figure 2

Vaginal hysterectomies as a percentage of all hysterectomies for women aged 15-44, by year and region, United States, 1970-1978

The average length of hospitalization required for hysterectomy decreased during the study period. Comparing 1970-1972 with 1976-1978, the mean hospitalization for abdominal hysterectomy decreased from 9.5 to 8.5 nights; for vaginal hysterectomy the decrease was from 9.3 to 7.3 nights. Regional differences were also evident in the length of hospitalization required for hysterectomy (Table 2). Women in the Northeast had the longest average hospitalization throughout the study period for both abdominal and vaginal hysterectomy. Women in the West consistently had the shortest duration of hospitalization for both types of hysterectomies. Comparing women in the Northeast with women in the West, the duration of hospitalization for abdominal and vaginal hysterectomy was, on average, 2.8 nights longer in the Northeast.

Table 2

AVERAGE NIGHTS OF HOSPITALIZATION REQUIRED FOR ABDOMINAL AND VAGINAL HYSTERECTOMY, BY GEOGRAPHIC REGION, UNITED STATES, 1970 THROUGH 1978

| | Type of hysterectomy | | |
|---|---|---|---|
| *Region* | *Abdominal* | *Vaginal* | *Total* |
| Northeast | 10.1 | 9.6 | 10.0 |
| North Central | 9.6 | 9.2 | 9.5 |
| South | 8.6 | 7.9 | 8.4 |
| West | 7.5 | 6.8 | 7.2 |
| TOTAL | 8.9 | 8.2 | 8.7 |

*—Reported by the Epidemiologic Studies Br, Family Planning Evaluation Div, Center for Health Promotion and Education, CDC.*

**Editorial Note:** Even after adjusting for possible confounding variables, the inter-regional differences in rates, the mean age of women undergoing hysterectomy, the proportion of vaginal hysterectomies performed, and the average hospitalization required for hysterectomy all suggest that medical practice varies considerably by region with respect to hysterectomy in reproductive-aged women.

Except for the early 1970s, the hysterectomy rate for reproductive-aged women remained nearly constant. The observed increase between 1970 and 1973 was attributable to increases in the rate for white women. Although the rate for women of black and other races was slightly higher than that for white women, the rates for the 2 groups were not far apart.

## REFERENCE

1. NCHS: Vital and Health Statistics (Series 2-No. 39). Rockville, Md, NCHS, 1970

# Month in Washington

Experts representing butchers, bakers, candlestick makers and just about every other human enterprise under the American sun continue to tramp and tread through the maze of details contained in the historic Reagan budget reconciliation and tax cut legislation searching to better understand what's in store for who.

Future federal spending for health care is pretty clear, however. The budget reconciliation measure cuts $2 billion in health spending over previously projected levels with most of the reductions coming to roost on the Medicaid program.

State governments will have to tighten their belts on the Medicaid program.

Federal matching payments will be reduced by three percent in the fiscal year starting Oct. 1 under the budget reconciliation law. The reduction will climb to four percent in fiscal 1983 and 4.5 percent in fiscal 1984. More than $1 billion in federal payments to the states will be missing.

The Administration's original plan for a flat five percent cap on increased federal outlays for Medicaid was scrapped by Congress. The final Medicaid plan followed closely the version of the budget bill approved by the House which voted a three, two, one percent cut over three years. The Senate had proposed a nine percent cap and reduction of the federal minimum contribution to 40 percent from the present 50 percent.

The budget law provides relief for states if they meet certain criteria. The federal cut could be offset by one percent each for operating a qualified hospital cost review program, having an area unemployment rate exceeding 150 percent of the national average and sufficient recoveries from fraud and abuse activities. State-effected savings over a certain pecentage also would qualify for upping federal payments.

A controversial Senate amendment that would have repealed Medicaid beneficiaries' freedom of choice of providers was tossed out in conference. Instead, the bill allows states to apply for waivers from the Health and Human Services (HHS) Secretary to eliminate freedom of choice, allowing states to direct beneficiaries to hospitals or physicians.

The law permits states to require individuals who overutilize services to use selected providers, and allows states to limit the participation of providers found to have abused the program.

The Medicaid section of the budget law provides that states in developing their hospital reimbursement payment rates must take into account the situation of hospitals that serve a disproportionate number of low-income patients. The HHS Secretary is required to develop a model prospective payment methodology for inpatient hospital services designed for use in both Medicaid and Medicare.

States are authorized to buy laboratory services and medical devices through competitive bidding. The HHS Department could allow states to establish cost-effective arrangements for services and drugs.

States are given the okay to enter into Medicaid prepaid risk arrangements with federally qualified health maintenance organizations (HMOs). The limitation on Medicare and Medicaid enrollment in HMOs with state Medicaid contracts is raised from 50 percent to 75 percent of the total membership.

*****

The Reagan Administration has told the nation's governors it is committed to achieving the type of block grants favored by the governors.

HHS Secretary Schweiker, meeting with the governors, commended the governors for their support in the Administration's tangle with Congress on the block grant issue. He conceded that the result was a long way from the original goal of turning the responsibility over to the states, but promised an effort will be made next year to put more federal programs into block grants.

In acting on the Administration's proposal to place a wide-range of programs into block grants, including 26 health programs, Congress gave the Administration at best half-a-loaf. About 20 health programs were placed in block grants in the budget reconciliation measure, and most of these were wrapped in restrictions as to how the states could spend the money.

The block grant concept is to place a group of federal programs into a single lump sum allotment to the states with the states then free to spend the money among the various programs as they choose.

Schweiker said the Administration is now working to design the block grants approved by Congress with a minimum of federal regulations so that the states will have maximum flexibility.

White House and HHS officials are beginning a series of regional conferences at all levels of government to coordinate and speed the implementation of the block grants, he said. The emphasis throughout will be on de-regulation, Schweiker told the governors.

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

The nation's medical schools next fiscal year will lose $40 million in capitation aid under the budget reconciliation law. However, medical school and other health manpower programs in general were not cut as deeply as the Administration recommended.

"Schools of medicine fared quite well compared to the bleak future they would have faced had the provisions embodied in the Senate bill been accepted," said the Association of American Medical Colleges (AAMC). However, virtually all of the money authorization levels in the final budget measure are below the current appropriations for educational activities.

The elimination of the capitation program of general aid for medical schools was a foregone conclusion, since both House and Senate budget bills proposed it. President Carter had proposed killing capitation the last two years of his administration.

On other programs, the reconciliation bill:

* Renews the Exceptional Financial Need Scholarship program at levels of $6 million, $6.5 million and $7 million for the next three fiscal years.
* Retains the Health Professions Student Loan program with ceilings of $12 million, $13 million and $14 million over three years.
* Continues the National Health Service Corps scholarship program with awards of $110 million, $120 million and $130 million for three fiscal years, enough money to provide 550 new scholarships each year. The Administration and the Senate had wanted a freeze of new scholarships.
* Funds the Health Education Assistance Loan program at $200 million, $225 million and $250 million.

The National Research Service Awards of keen interest of medical schools, were extended for two years at $182 million and $195 million, substantially above the $150 million implied in the Senate bill. The AAMC said that as a result the National Institutes of Health (NIH) in the fiscal year starting Oct. 1 will be able to support between 8,000 and 10,000 trainees.

The final version of the Guaranteed Student Loan program limits eligibility to those students with adjusted gross family incomes of $30,000 or less, except where students can document need otherwise. All students must pay a five percent origination fee when they receive their loans.

Under the budget law, grants for Departments of Family Medicine were set at $10 million, $10.5 million and $10.5 million; ceilings for Area Health Education Centers were authorized at $21 million, $22.5 million and $24 million.

Other authorizations:

General Internal Medicine and Pediatrics training—$17 million, $18 million, and $20 million; Family Medicine training—$32 million, $34 million and $36 million; educational assistance to disadvantaged people, $20 million, $21.5 million and $23 million; financial distress grants—$10 million a year; grants for curriculum development—$6 million, $6.5 million and $7 million; preventive medicine initiative—$1 million, $1.5 million and $2 million.

Schools of Public Health were authorized $21 million over three years for capitation grants, $10.5 million for traineeships, $5 million for health administration programs, and $1.5 million for health administration traineeships.

Aid for nursing education was continued at a much higher level than the Administration recommended. Advanced nurse training was provided $14 million, $15 million and $16 million. Nurse practitioners training received $12 million, $13 million and $14 million. Nursing student loans were granted $48 million total over three years, and nursing special projects, $31.5 million.

*****

A federal program to encourage accreditation of people who perform radiologic procedures and minimum standards for certification of people who administer radiologic procedures was a surprising provision of the budget reconciliation law.

Since the provision gives much discretion to the HHS Secretary, there is a question of whether such a program will get far off the ground. The Administration had no chance to take a position on the measure which was opposed in previous years by the American Medical Association and the American Hospital Association, among others, on grounds it would duplicate existing private quality controls.

The bill requires the HHS Secretary to issue regulations promulgating minimum standards for the accreditation of educational programs for training and minimum standards for certification. The bill does not apply to practitioners.

The HHS Secretary also is called upon to develop model state legislation making it unlawful for non-certified people to perform radiologic procedures and to provide that educational requirements for certification will be limited to those programs accredited by the state.

The provision gives the HHS Secretary authority to set guidelines, for safe levels of radiologic exposure for medical and dental procedures.

There are no provisions to enforce compliance by the states, but the standards would be applicable to federal agencies.

# The President's Page

## Gratitude

It is generally agreed that physicians belong to the best paying profession. Whether we engage in private practice or work in another form of medical endeavor, our financial rewards are substantially higher, on the average, than are those of the practitioners in the other learned professions.

There are other differences. The lawyer can survive with his library and pen; the teacher with his books and students. The dentist thrives on his drill and hands. Only the physician in modern clinical medicine requires a massive outlay of funds to make his work possible. There is little question but that in the last thirty years there has been a phenomenal growth in the technology of medicine which has required a tremendous commitment in new machinery and more people to serve our patients. These advances have fueled the most exciting era in medical history and have made the practice of medicine the most rewarding profession of them all from any perspective one can imagine.

The workshops we all enjoy—the bricks and mortar, the laboratories, the CAT scanners, the ICU's, CCU's, Neonatal Intensive Care units, the rehab centers, the operating suites—have been given to us to use as a public trust. These expensive resources are there for the common good of our fellow citizens, but we have been allowed to establish the parameters for their use. No other profession is as blessed with trust and power.

In gratitude for these blessing which make our role so gratifying and so fulfilling it seems appropriate that we should always be sensitive to establishing the guidelines to minimize the waste and excesses we all know exist in the marketplace. Abuses which result from our own shortcomings must be eliminated by honest, educational peer review. Abuses which we know result from the litigious climate (overtesting, et al) we live in must be corrected by making a strong case with our legislators for appropriate tort reform. Abuses which result from the small minority who are venal and corrupt must be eradicated by the proper imposition of our strict code of ethics.

From our very beginnings as students and residents our lives have been subsidized by society in general. Each of us owes that society a great debt of gratitude. I feel that here in Connecticut, at least, we are trying to wipe the slate clean by giving something back. Do you agree?

Andrew J. Canzonetti, M.D.
*President*

# Have you considered participation?

- The Century Contract Comprehensive Schedule of Services has been increased *three times* in 18 months.
- These increases, in the aggregate, have amounted to 51.6%.
- We will continue to update the Century Contract schedule annually.
- Participating Providers receive prompt payments directly from Blue Cross & Blue Shield.
- Your participation can reduce receivables and eliminate some billing steps.
- Over one million Connecticut residents are Century Contract members for whom claims totaling $82.5 million were paid in 1980.
- Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

**Blue Cross**
**Blue Shield**
of Connecticut

THE HEALTH CARING PEOPLE

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Provider, call our office or complete the form below and send it to:

Blue Cross & Blue Shield of Connecticut
Professional Relations Department
370 Bassett Road
North Haven, CT 06473

Telephone: 1-800-922-1742 or 265-8203

Name ______________________ Telephone ______________

Address ______________________________________

City ______________ State ________ Zip ____________

CM781

# Reflections from the Dean's Office

## Shall It Be Caveat Infirmus?

ROBERT U. MASSEY, M.D.

The unease began, at least for me, when we began in the 60's to hear about the health care industry and to talk of providers and consumers. Ten years later hospital administrators began openly to discuss the virtues of marketing, and now we have discovered competition, sometimes euphemistically calling it consumer choice, and implying that there is a difference.

To prevent chaos in society, indeed to allow civilization to begin, unfold, and endure, some civil way of allocating property and services must be devised. Centralized planning and regulated distribution is one way; the marketplace is another. There is an infinity of variations from pure communism to the unregulated black market, except that those pure forms probably never occur, or do so only briefly.

Our preference for inclining toward one method or another is all mixed up with our place in the layers of society, our values, our history, and our idols. After settling on what economic faith we will espouse, we can then prepare a defense for it which is both logical and provable from historic example and plain observation.

That seems cynical, and indeed it is. There must be some ways of providing for the distribution of specific classes of goods and service that are better than others, and therefore there may even be best ways, although that is not of practical concern. There are matters of social good and individual need to consider; issues of reasonableness, justice, and compassion to balance. It is no good to suggest that the distribution of bread may be likened to the distribution of cake, as Marie Antoinette found.

Therefore, applying one rule to all cases, one system for all goods from penicillin to perfume, will not do.

Undoubtedly we are reacting to the excesses of the regulators and the planners; to the rightful and healthy fear of tyranny that a meddlesome bureaucracy evokes. We are pretending to be corporate managers when we talk of marketing hospital services and boast of the growth potential of the health care industry; we embrace competition having just left off struggling out of the arms of the regulator. The lively reaction is as it should be.

However, Ludwig Eichna recently wrote:

> "Society increasingly criticizes the poor medical ethics of doctors. Paradoxically, society is creating an environment that teaches students the bad medical ethics it deplores. With compulsive attention to the cost of medical care, societal pressures are making medicine a business. There is a continuous barrage of the terms 'health industry,' 'consumer,' and 'cost effectiveness.' Patients and health care are not mentioned."[1]

Arnold Relman[2] has estimated that the proprietary-hospital business is growing at the rate of 15 to 20 percent per year, and that proprietary nursing homes, profit-making home services, proprietary laboratories, proprietary hemodialysis services, and for-profit emergency service "packages", added to these for-profit hospitals, now account for possibly more than $40 billion annually of gross revenues. In many of these businesses, physicians are entrepreneurs, or at least are partners or board members. Devising laws favoring competition to perfect the imperfect market, whose invisible hand governs the distribution and the price of health or medical services, must also favor the growth of what Relman calls the new medical-industrial complex. That in turn may further diminish public trust and call forth even more regulation.

No transaction can be made free of risk; a nearly risk-free society might be pleasant for some of us sometimes, but it would be deadly. *Caveat emptor* is a salutary rule when the buyer purchases watches or cigarets; *caveat infirmus* cannot be substituted. The buyer of wrist watches trusts the market to give him his money's worth; the patient trusts the physician and the hospital because he believes that they have committed themselves to his welfare. If that commitment comes to be seen as no more than self interest, what happens to the notions of profession and vocation?

Ours is a complicated and interdependent civilization, and its ethical values are essential but fragile and always under threat. If we are now to make changes, and we must, the guardians need to be especially watchful.

### REFERENCES

1. Eichna LW: Medical-school education, 1975-1979, A Student's perspective N Engl J Med 303: 727-734, 1980
2. Relman AS: The new medical-industrial complex. N Engl J Med 303: 963-970, 1980

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# "You've got a suit, doctor, and it's not hearts or clubs."

Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs*, 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

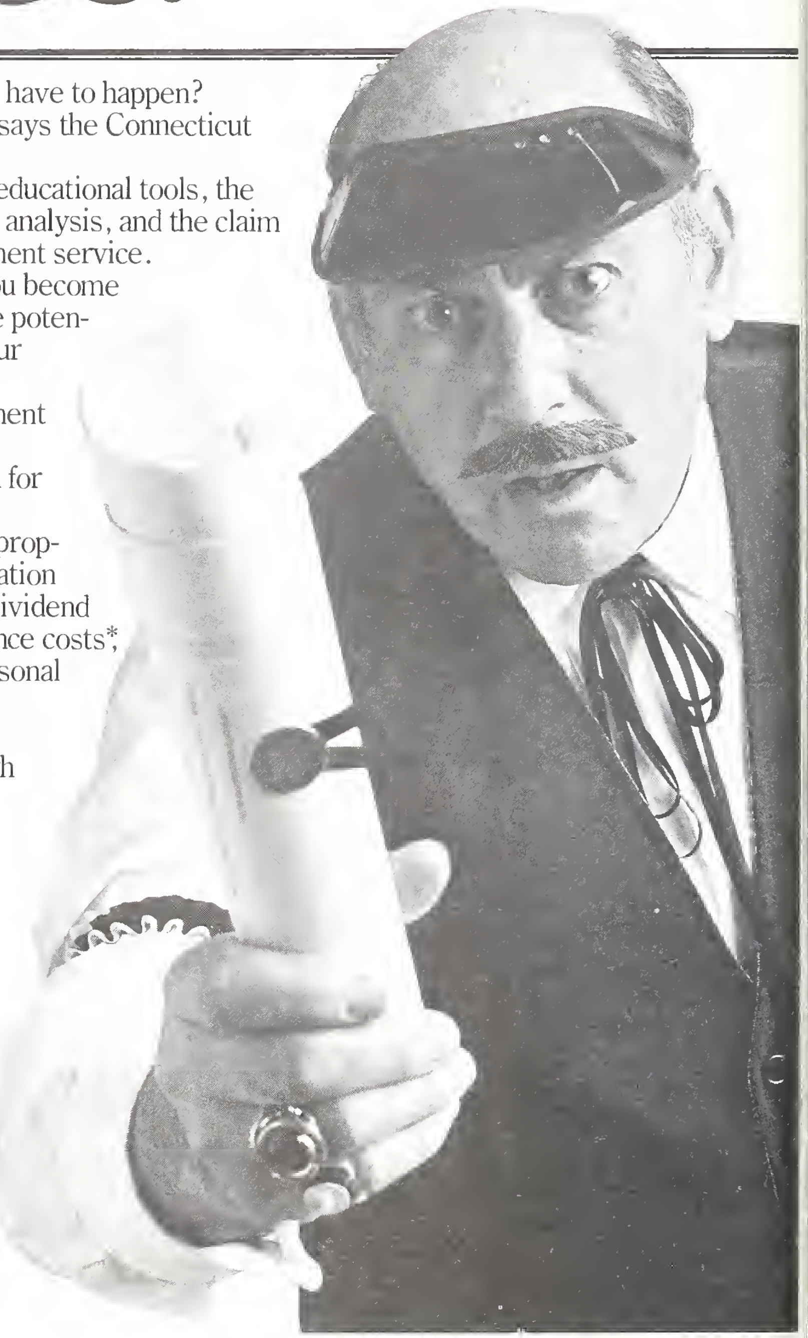
If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.

Ætna

LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company



Connecticut Medicine

*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editorial Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
James D. Kenney, *New Haven*
Ramon N. Kranwinkel, *Danbury*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Stewart J. Petrie, *Derby*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*

# EDITORIALS

## Connecticut Medicine Symposium on Sports Medicine

Athletic performance has commanded increasing attention worldwide in the post-World War II era. Participation in athletic competition has been influenced greatly by the significance it has assumed in national prestige and potential for financial reward. In addition, the level of participation in convential scholastic, college and recreational sports has expanded in recent years. More sophisticated techniques for evaluating athletic performance, understanding of physiological responses to physical and emotional stress from athletic competition, and improved methodology for diagnosing and treating athletic injuries have evolved. The latter, that is the diagnosis and treatment of injury, have been the basis for continued performance capability. With increasing intensity of high level performance, understanding of maximum functional capabilities and specific organ responses—even to the cellular level—have demanded active participation of much of the scientific community. To be able to address the demands of national and world performance level athletes, the coordinated efforts of many scientific disciplines are essential. Some university centers, recognizing this need, are making concerted efforts to define the essential elements necessary in a Sports Medicine Program in order to make available to the athlete maximum opportunity for high level performance and sustained levels of function with minimal exposure to serious injury. A fully developed sports-medicine effort must encompass the ability to recognize accurately the extent of injury and create technical skills permitting maximum restoration of function and to allow return to competition where possible. This is sports medicine! Any level professional can, in his own field of expertise, modify a running shoe, take out a knee cartilage or repair a torn ligament. Essentially, this is what the great majority of what has been called "sports medicine" is in the United States today. More centers are needed to combine physicians, scientists and educators in disciplined environments directing the full gamut of basic and applied scientific endeavor toward improved athletic performance. Under these conditions, exposure with a minimum of acute or chronic risk should be possible allowing maximum physical and psychological benefit.

In the first article of this symposium, we will present the basic ingredients needed to establish a center for sports medicine. The fully legitimate Sports Medicine Program should be a multi-disciplinary, high level scientific endeavor.

Harry R. Gossling, M.D. and
John P. Fulkerson, M.D.
Guest Editors

## Students' Examinations by the School Physician

The state of Connecticut mandates periodic examinations of all school children. After the preschool examination, it is required again at the 6th or 7th grade and lastly at the 10th or 11th. This may be done by the school or private physician or other community facility according to the parent's preference.

Over the years there have been objections by some pediatricians and family practitioners to the examination by the school physician citing its inadequacy, brevity, and interference with the historical physician-patient relationship. We feel it is important to mention these additional facts. 1. The parent has freedom of choice (In Middletown, over 95% request the school doctor). 2. There are a surprisingly large number of

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

children rarely seen by any physician except for obvious acute illnesses and sometimes not even then. 3. The in-school examination is offered as an additional medical service, is recognized as only a screening procedure, and is not intended to replace the more detailed study available in the private office.

Our school health records over the past many years demonstrate consistently the existence of previously unrecognized or untreated abnormalities in an average of 7-8% of the examinees. This amounts to 700-800 students yearly in our school population of about 10,000. In Middletown the school health system provides services for five parochial (two high and three elementary) and twelve public schools (two high, two middle, and eight elementary). There are eight school nurses and three physicians, one of the latter the director of the program.

All significant abnormalities are listed by the doctor on the school health record. The nurse notifies the family of the findings and recommendations. She is also responsible for follow-ups whenever indicated. Our school examination routinely omits 1. Otoscopy - unless a hearing deficit has been recorded previously by the nurse or when an obvious problem exists. 2. Auscultation of the lungs - a procedure rarely of value in this type of study in a supposedly healthy school age individual. 3. Abdominal palpation - again of questionable value and often difficult to perform satisfactorily.

The following rather interesting list of diagnoses found at our school examinations illustrates at least to us the value of a "screening procedure".

Ears:
  (hearing tested by nurse) otitis media and externa
Eyes:
  (vision tested by nurse) conjunctival pallor, conjunctivitis, exophthalmos, nystagmus, various muscle dysfunctions
**Mouth:**
  congenital or acquired dental defects, caries, malocclusion, lymphoid hyperplasia (tonsillar, pharyngeal) infections of the pharynx, tonsil, gums, palatal defects
**Neck:**
  adenopathy, thyromegaly
Chest:
  congenital deformities of sternum and chest wall (some sufficient to require evaluation of possible interference with cardiopulmonary function), cardiac arrhythmias, functional and organic murmurs, coarctation of the aorta, hypertension, dextrocardia, gynecomastia, breast tumors, breast changes consistent with diagnosis of pregnancy
**Abdomen:**
  umbilical and inguinal hernias, absent or undescended testes, hydrocoele, large varicocoeles, inguinal adenopathy
**Endocrine or Metabolic:**
  hyper- and hypothyroidism, varying degrees of obesity, malnutrition, Klinefelter's syndrome
**Orthopedic:**
  pes planus, pes cavus, bunions, genu valgus and varus, epiphysitis, lordosis, kyphosis, scoliosis (some severe)
**Skin:**
  acne, pityriasis rosea, tinea versicolor, tinea cruris, scabies, pediculosis, psoriasis, ichthyosis, alopecia areata, traumatic changes consistent with diagnosis of child abuse

In summary, examination by the school physician, admittedly only a screening procedure, can be a valuable adjunct to health services provided by the private sector. It is especially important for those children who rarely see a doctor for whatever reason. Our findings are always reported to the parent who should then seek appropriate aid from the private physician or other community facility as therapy is not a part of the school responsibilities. The above listed diagnoses include some severe disease states, many requiring immediate attention, be it medical, surgical, dietary, or socio-economic. Persistent follow-up by the nurse is often necessary to obtain parent co-operation.

Benjamin M. Shenker, M.D.
*Director of School Health Program*
*Middletown, CT*

## Breast Cancer Questions—and Answers?

The proper initial treatment of female breast cancer has become a most confusing area of medical endeavor during the past three decades. The radical removal of breast, underlying pectoral muscles and axillary lymph nodes —a procedure firmly established in the early twentieth century—was questioned in the early 1940s by McWhirter in Edinburgh who advocated less tissue removal and additional radiation therapy. Surgeons so long indoctrinated to the radical procedure did not quickly or universally accept this concept of tissue sparing.

Individual surgeons, however, in many parts of the world recognized the role of lesser operations than radical mastectomy and even began limited use of "lumpectomy" or "quadrantectomy," usually with post-operative radiation to the breast and regional lymph nodes. Publications from British and Continental centers suggested benefits from this therapy and somewhat later Crile and Cope in America independently emphasized the desirability of preserving the breast, particularly when recurrence and survival rates were little different than results achieved with the physically and psychologically mutilating Halsted mastectomy.

New England became a center for the "conservative" approach and following Cope's early publications, Prosnitz and Goldenberg reported in June, 1975 an exploration into this treatment plan, thereby establishing a practical combination of limited operation and radiation therapy in Connecticut. Somewhat later this was followed by Hellman's published experience in Boston which again emphasized good results.

Almost all of the publications dealing with limited operation until recently reported nonrandomized studies which selected the most favorable patients for inclusion. Critics of this therapy have pointed out that the reported good results may be a reflection of this selection process rather than a superior therapeutic technique, a point with which none of the proponents have disagreed. Recently a large study of patients with small breast cancers, randomized at the National Tumor Institute in Milan, Italy, to the Halsted mastectomy or to quadrant resection with axillary node dissection, radiation therapy to the ipsilateral residual breast tissue, and chemotherapy was published in *The New England Journal of Medicine.* A similar study is now in progress under the auspices of the National Surgical Adjuvant Breast Project, but the Italian report is the first to indicate statistical significance in lack of difference of overall recurrence and survival rates between the two groups. The authors observed that "mastectomy appears to involve unnecessary mutilation in patients with breast cancer less than 2 cm. and no palpable axillary nodes." This study coupled with the earlier studies of the NSABP should once and for all relegate the standard radical mastectomy for early stage breast cancer to the role of an interesting historical development in the history of surgical accomplishment rather than a part of current therapy. But is mastectomy itself never indicated? The answer must be "no" since mastectomy in one form or another must be part of therapy for those women with cancer more advanced than Stage I.

The role of axillary node removal has also been widely investigated in recent years and its place in surgical therapy of breast cancer is still unclear. At first, lymph nodes were excised with the breast when it was thought they were involved with the malignancy and their removal fitted the concept of cancer operations which required removal of the primary tumor in continuity with its regional lymph node drainage if the patient was to be assured of cure. This elementary concept has been complicated somewhat during the recent decade past as recognition has been established that the nodes themselves are not important as foci of tumor except as positive status reflects in many instances the true systemic nature of breast cancer in some patients. Microscopic examination of the nodes is important to many clinicians as a method of determining that the cancer is not localized, but rather already systemic in its scope suggesting the need for systemic chemotherapy. This viewpoint may be true even for those women with clinical Stage I disease in whom no nodes are palpable in the axilla but microscopically as many as twenty-five per cent of such patients will have malignancy in some of the nodes. Is this important for planning treatment? A retrospective study from Yale several years ago noted that Stage I breast cancer patients who had mastectomy, axillary node dissection and radiation therapy to the chest wall and regional lymph nodes could have as many as three axillary nodes positive for cancer and still have a recurrence and survival experience as favorable as similarly treated women whose axillary nodes were all negative for metastases. Such conflicting data confuse the clinician and it is obvious that the final word is not yet available. It can only be hoped that the current NSABP protocol involving local excision of the primary tumor and discontinuous axillary node dissection will provide some insight when the clinical material is finally evaluated.

The treatment of breast cancer has a long history, some four thousand years since the first recorded description of what was probably mastectomy in ancient Egypt. Only in recent years have long-held-sacred tenets been subjected to doubt and scrutiny. Practitioners of the medical art must keep an open mind and be prepared to alter their practice patterns to conform to ever changing knowledge which may run counter to all that has been taught as gospel in the past.

Ira S. Goldenberg, M.D.

*Professor of Surgery at*
*Yale University School of Medicine*

---

## Medical Care Price Increases Top Rising Inflation Rate in July

Medical care prices increased faster than the rate of general inflation both in the month of July and in the 12-month period ending in July, according to latest figures from the federal government's consumer price index (CPI). For the second consecutive month, the index's Medical Care component rose faster over the preceding 12 months than did the CPI for all items. This turnaround followed a long period in which the overall CPI registered greater 12-month increases than did the Medical Care component. Also, for the first time in 15 months, the overall CPI's 12-month change was higher than registered the month before.

Seasonally adjusted percentage changes for July and unadjusted changes for the 12-month period ending in July were: CPI, 1.2, 10.7; Medical Care, 1.3, 10.9; Medical Care Services, 1.4, 10.8; Physicians' Services, 1.1, 11.0; Hospital and Other Medical Care Services, 1.4, 13.7; Hospital Room, 1.2, 14.3; and Other Hospital and Medical Care Services, 1.1, 13.3.

—*Hospital Week,* August,1981.

# AYR INSURANCE AGENCY

JANIS AYR ESPOSITO
ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

## SPONSORED BY
## THE CONNECTICUT STATE MEDICAL SOCIETY

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

---

# ELMCREST

A COMPREHENSIVE
MENTAL HEALTH TREATMENT CENTER
FOR ADULTS AND ADOLESCENTS

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Matthew Weinstein**
*Administrator*

**Lane Ameen,** M.D., F.A.P.A
*Medical Director*

**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

- ☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
- ☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
- ☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
- ☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
- ☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
- ☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
- ☐ GERIATRIC GUIDANCE CENTER
- ☐ DAY HOSPITAL

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

# Letters to the Editor

**Letters to the Editor are welcomed and will be published, if found suitable, as space permits. They must be signed by all authors, typewritten in double spacing (including references), submitted in duplicate, must not exceed 1½ pages in length and will be subject to editing and possible abridgment. To be considered for publication, letters referring to a recent *Journal* article should be received within six weeks of the article's publication date.**

## A NEWCOMER'S VIEW OF THE AMA PROCESS

*To the Editor:* It was, quite honestly, a thrill for me to attend my first AMA meeting in Chicago in June, 1981. For those who view the AMA and its functions as some stodgy, anachronistic organization that is run by self-perpetuating people, I am pleased to be able to report otherwise.

Time and space do not permit a lengthy discourse on what was a very pleasant experience there, but I will comment on a couple of things. First, the officials and staff of the AMA fully recognize that the doctors in attendance are representative of their constituency. These are not idle words. The day before the meeting began, all of us who were new members met with the Speaker of the House (Dr. Rial). We were given a small handbook regarding the customary parliamentary procedures for these meetings. While most of us are familiar with such "rules of order," these particular rules are geared toward the delegates being able to propose any motions, amendments, or other thoughts about the subject under deliberation in an organized fashion and without any hesitancy. Indeed, in many cases, the chairmen of reference committees, state delegations, and even the Speaker of the House himself, will help the delegate to frame his motion in a proper manner to receive consideration. This organization truly works from "the bottom up" and yet the manner of handling the multitude of items is done in a very expeditious fashion.

Second, the devotion of these doctors to the betterment of health cannot be denied. I tried to put myself in the place of one of the many persons from the news media that attended this meeting and I cannot help but feel that they were impressed with the amount of scientific detail and self-regulation that we inflict upon ourselves in order to better health care for all citizens. I saw no evidence of any "reactionary attitudes" in the assembly. Discussions were held and details worked out to ensure health care for prison inmates, elderly, military personnel, handicapped persons, etc. I feel that if some of the people who seem to oppose joining the AMA could have witnessed this process, they could not help but want to join. I urge all who are not AMA members to reconsider their position. Regardless, the AMA will continue working on your behalf.

Stewart J. Petrie, M.D.

*Derby, CT*
*Editor,* Issues and Insight, *official publication of the New Haven County Medical Association.*
*Dr. Petrie is a CSMS Alternate Delegate to the AMA.*

## THE FUTURE OF THE CONNECTICUT STATE PSYCHIATRIC HOSPITAL

*To the Editor:* At the present time in Connecticut, the State Psychiatric Hospital is the principal acute and chronic care facility, the refuge, for blacks and other minorities, the poor and homeless, the chronically mentally ill, and the difficult and socially disreputable patients. They are classified medically as mentally ill, addicted or alcoholic.

The Superintendent, administratively, is portrayed as a fine, autocratic, gentleman, physician, of the old school, who sits in his mahogany-paneled office directing this large benevolent institution in a closed but secure system of care. He probably represents the last remnant in this country of the benign dictator. A. Stone, in an article entitled "Remember Me to Life," stated:

> "Our Society says in effect that the primary goal of a mental hospital is to provide asylum, humanly for the patient, and reciprocally for the community, discretely. The renumeration, the geographic isolation, the limited number of personnel, the facilities, do not represent a priority of investment. So a difficult job must be done, under difficult circumstances, and the public must not be disturbed."[1]

The Connecticut Commitment laws are administratively designed to facilitate this mass exodus of the disreputable from the community to the country. Even the voluntary commitment law is more confining than most involuntary commitment laws in other states. Again, Alma Stone, "Insidiously the mass moves into silence and inertia."[2]

Because of this receptivity of the Connecticut State Psychiatric Hospital, deinstitutionalization as an active process, is only a myth believed by politicians, public officials and consumer mental healthniks. The Legislature, fantasizing that it has already occurred, almost voted to close one of the State Hospitals. Although there are some scattered episodes of dumping and some complaints about the staffing and patient care not being totally adequate, the mental health scene in Connecticut is serene and peaceful - at the present time.

The Departments of Psychiatry of the General Hospitals, the Private Psychiatric Hospitals, the Departments of Psychiatry of the Medical Schools, and the psychiatrists in private practice might publicly lament this situation (more generally they ignore it). They may cry out that all acute care for the mentally ill, both voluntary and involuntary, black and white, rich and poor, take place in the community hospitals and ambulatory care services. They might decry the antiquated treatment of the alcoholic and the drug addict in a state hospital. They may demand the development of a comprehensive array of social, occupational and residential rehabilitative services with coordinated care for the chronically mentally ill in order to return them to the community. They may shudder at the repressive commitment laws. But, they make sure that they don't shout too loud; that their roar is muffled. And why? Because we in the private sector of psychiatry in Connecticut have it made. The disreputable, the poor, the problem, the difficult patient can be smoothly and efficiently transferred from our emergency rooms in our communities to those caring institutions away in the country.

There appears on the near horizon no real force to halt this revolving door process. There are no Bruce Ennis' in Connecticut (thank goodness) or real legal advocacy. The Mental Health Association is like a mouse that roared. There are no visible former patients or relative organizations to question the process. Except for the shunted patient, this process is harmonious to our present mental health system and social order.

I predict that this delicate but seemingly unjust balance between the community and the state hospital will one day collapse. Rehabilitation of the chronically mentally ill, the alcoholic, the addict, is a community imperative. Our present system is due for some stress. It will require the inherent qualities of sacrifice and effort on the part of all of us.

Robert M. Daly, M.D.

*Associate Clinical Professor of Psychiatry*
*Yale University School of Medicine;*
*Chairman, Department of Psychiatry*
*Park City Hospital*
*Bridgeport, Conn.*
*Presented at Yale Department of Psychiatry*
*Clinical Faculty Meeting*
*November 12, 1980*

### REFERENCES

1. Stone A: Remember Me to Life. Psychiatry Vol 37, May 1974
2. Stone A: Ibid

## THE VIETNAM VETERAN

*To the Editor:* Recently there has been a growing public concern and interest in the Vietnam Era Veteran. Operation Outreach is a reflection of the Federal Government's attempt to reach out and help these Veterans. This program has been in operation for one and a half years and consists of 91 original Centers with 42 more to be set up. The goals of these Centers are: 1) to reach out to all Vietnam Veterans; 2) to help those Vets in need of assistance; 3) to educate the public; 4) to bridge the gaps that may separate Vietnam Veterans from the supporting agencies available to them; and 5) to create comradeship among these special Veterans.

Operation Outreach via these national Vietnam Veteran Centers seeks to help by using a "peer" counseling approach. This concept is used in an attempt to therapeutically help Veterans to feel accepted and understood. These aspects of acceptance and understanding will allow these long isolated men to build a sense of trust in the counselors. Trust is the major key to help these Veterans to work through war-related issues long since supressed deep within the individual. The Centers run a variety of rap groups to facilitate mutual venting of feelings experienced by the Vietnam Veterans. Operation Outreach has become keenly aware of the variety of roles which the Vietnam Veteran served in during the war.

Combat Veterans, along with support personnel (such as Navy personnel or supply personnel), have been seen in large numbers. The program also recognizes that many physicians, from surgeons to psychiatrists, served in Vietnam. This small article is an attempt to reach out to the doctors who served in the war.

The New Haven Vietnam Veterans Center started a doctor's rap group in September of 1981. This group will attempt to discuss mutual concerns and issues. We would like to have this opportunity to get to know you so that we can learn from each other, as Veterans and helping professionals. The Center looks forward to hearing from any medical doctors, psychologists, or social workers who are Vietnam Vets. If you are interested, please contact Daniel W. Campbell, Jr. at: The Vietnam Veteran's Operation Outreach Center, 363 Whalley Avenue, New Haven, Conn. 06511 (203) 773-2232.

Daniel W. Campbell, Jr., B.A., M.A.
*New Haven, CT*

---

## Court Rejects Suit of Abortion Doctor Barred by Hospitals

A U.S. district court in Orlando, FL, has dismissed a suit brought by a gynecologist who claimed that the refusal of two area hospitals to grant him staff privileges violated antitrust and civil rights laws. The physician, who served as the medical director of an area clinic providing pregnancy and abortion counseling and abortion services, applied to Winter Park Memorial Hospital and Florida Hospital for membership on their obstetrical and gynecological staffs. In each case he agreed that he would not perform abortions in the hospital but would admit patients for necessary post-abortion hospitalization and treatment. Upon learning of the physician's applications, a physician on the staffs of both hospitals notified local antiabortion groups and other physicians opposed to abortion with the intention of promoting a mass boycott of the hospitals if staff privileges were granted. As a result, each hospital denied staff privileges to the physician because his presence on the medical staff would have created a "disruptive influence."

The court dismissed the physician's claim that the denial of privileges violated the Sherman Act, because the conduct of the defendants had "no more than an incidental effect upon interstate commerce." The court also dismissed his claim of a civil rights violation because the complaint failed to show the required "state action" on the part of the defendant hospitals. (Samuel Barr, M.D. v. National Right to Life Committee, et al., Case No. 79-420-ORL-DIV-Y, July 27, 1981)

---

## Researchers See Expanding Neonatal Intensive Care Need

Continued increases in the overall number of births in the United States and in the number of babies of low birth weight will expand the need for neonatal intensive care, according to a case study on the costs and effectiveness of neonatal intensive care recently released by the congressional Office of Technology Assessment (OTA). The background paper is part of an OTA overall project, requested by the Senate Labor and Human Resources Committee, assessing cost-effectiveness analysis of medical technology.

Pointing out that a newborn's weight is the most important predictor of illness or death in early infancy, the case study's authors conclude that over the past 10 to 15 years, since neonatal intensive care methods have been used, there has been a dramatic improvement in the survival of low birth weight (2,500 grams or less) newborns. They state it is impossible to determine how much of this improvement is due to medical care and how much to other factors, such as lower prematurity the maturity rates and improved maternal health and nutrition. But the evidence, they maintain, strongly suggests that neonatal intensive care has played a major role in improving the chances of survival of many newborns. The authors also discuss hospital facilities delivering neonatal care, which are classified into three groups, according to the sophistication and scope of the services provided.

—*Hospital Week,* August 28, 1981

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## CALL

## SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

**The 1981 Annual Meeting of the House of Delegates will be held at the Ramada Inn, North Haven, commencing at 12:30 P.M. on Wednesday, November 18.**

**Andrew J. Canzonetti, M.D.**
**Joseph S. Sadowski, M.D., Speaker of the House**
**Louis C. Backhus, M.D., Secretary**

## INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society provides:

*Resolutions may be introduced by any Active or Life Member or student members or postgraduate physician members of the Society, in compliance with the following provisions:*

*a. All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*

*b. Component county associations or the student members or postgraduate physician members, whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc. be considered regular business if they are received later than fifteen days prior to the date of the meeting.*

*c. Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of The Society at any time and shall be considered as regular business.*

*d. Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provision of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

---

## COUNCIL MEETING

Wednesday, September 2, 1981

### Attendance

Present were: Drs. Canzonetti, Parrella, Doctor, Backhus, Mendillo, James, Friedberg, Van Syckle, Whalen, Jr., Abbot, Petrie, Jameson, Freedman, Barrett, Ragusa, Orphanos, Kaess, Shenker, McDonnell, Czarsty, Sonnen, Fabro and C. Callan.

Also present: Mr. Norbeck, Mrs. Lindquist, Mr. Sweeney, Mr. Brunell, Mr. Fiorentino, Mr. Tomat (FCMA), Dr. M. Sharon, Mary O'Connor and Pat Cecchini from Lowengard & Brotherhood.

Absent were: Drs. Sadowski, Hecklau, Hess, Rubinow, Anderson, Magram, Zlotsky, Beck, Seide, Bobruff and Hayes.

### Comments from the Chairman of the Council

Dr. Van Syckle, Chairman of the Council, discussed the Council meeting format, which had previously been adopted, and suggested that members make an attempt to adhere to that format as closely as possible. This format was originally proposed to set some guidelines for a smoother and more efficient operation of Council meetings.

### Review of Council Subcommittees 1981 - 82

The Council reviewed the roster of its subcommittees and ad hoc committees for 1980-81 and made necessary deletions and appointments for 1981-82 as follows:

1) Subcommittee to Study and Revise the Bylaws: Deleted the name of Sidney L. Cramer and added Morris J. Seide.
2) Subcommittee on Administrative Organization and Planning: Deleted the name of Sidney L. Cramer and added Gioacchino S. Parrella.
3) Subcommittee on Publications: Voted to disband the subject subcommittee.

4) Ad Hoc Committee on Health Systems Agency: Voted that the charge to the subject ad hoc committee be transferred to the Committee on Statewide Medical Planning and that the Ad Hoc Committee on Health Systems Agency be disbanded.
5) Ad Hoc CSMS Organizational Political Action Committee: Voted to disband the subject ad hoc committee.
6) Ad Hoc Successor Committee to CACS: Voted that the charge to the subject ad hoc committee be transferred to the Committee on Statewide Medical Planning and that the Ad Hoc Successor Committee to CACS be disbanded.
7) A corrected list of Council Subcommittees is attached to these minutes.

### Report of the President

President Canzonetti mentioned that Albert Snoke, M.D., has contacted him about a meeting at the UCONN Health Center on September 8 pertaining to the consequences of defunding PSROs, HSAs and planning agencies. He will keep the Council apprised of any further developments.

Dr. Canzonetti commented on the luncheon held on August 14 in honor of the late James Tierney, M.D. It was attended by members of the Tierney family along with Drs. Canzonetti and Jack Parrella, and Messrs. Rick Fiorentino, Frank Sweeney and Tim Norbeck. A citation from Governor O'Neill was presented to Mrs. Tierney.

### Committee on Public Relations

Michael Sharon, M.D., Chairman of the CSMS Committee on Public Relations, introduced to the Council Ms. Mary O'Connor, President of Lowengard and Brotherhood, the Society's public relations firm, and the new account executive, Ms. Pat Cechini. Dr. Sharon described the activities of his committee, including the recent newspaper advertisements and the public opinion survey, and then turned the discussion over to Ms. O'Connor for specific details of the program.

Ms. O'Connor reported on the public opinion survey and distributed copies of the poll. She explained that the survey sought to ascertain the degree of public awareness of CSMS, the physician's image in the state, and the public opinion and degree of concern on various issues. After a period of questions and answers, Ms. O'Connor and Cechini were dismissed. The Committee on Public Relations will continue to update the Council on further developments.

### Request from the Chairman of the Committee on Third Party Payments

It was VOTED to inform Dr. Donn Barton, Chairman, that the items submitted by his committee and listed below have been approved and discussed by the Council and that the Committee on Third Party Payments should develop a program for implementation and submit to the Council for approval. It was further VOTED to invite Dr. Barton to attend the next Council meeting.

1. Make a strong effort to have third party payors pay for emergency visits in a physician's office, and apply a deductible to visits to hospital ERs in order to
    A —Improve continuity of care
    B —Cut costs by millions of dollars in CT
2. Make a strong effort to negotiate with DIM to get welfare receipients to use a primary physician instead of the ER. An effort must be made to increase fees so that more MDs will take care of welfare patients.
3. Show the facts to science and financial writers to let them draw their own conclusions.

### Committee on Statewide Medical Planning

Jerome K. Freedman, M.D., Chairman of the Committee on Statewide Medical Planning, reported that his committee had agreed on the role of CSMS in the area of health planning in Connecticut, as had been requested by the Council. The role is summarized as follows: "CSMS goals in future health planning should be quality advocacy, patient advocacy, and cost-effectiveness advocacy in every practice setting. We shall deal with other interest groups, but we shall retain our own goals and independence in reaching them. During this current period of uncertainty in the health planning process, we should delay no longer in putting ourselves at the forefront of medical progress in future health planning in our state." After discussion, it was VOTED to accept the report of the Committee on Statewide Medical Planning as meeting the requirement as outlined and requested by the Council at the June meeting.

### Report on State and Federal Agencies

President Canzonetti mentioned that the PSRO long-term care review had been a successful program but was now abolished. He reported that the Hartford and New Haven County Medical Associations were meeting with the insurance carriers under the aegis of the Department of Income Maintenance in an effort to continue the program. Staff report on Planning and Regulatory Agencies was accepted as information.

### Life Members

The names of the following new life members were presented to the Council for information:

Arthur J. Adams, 540 Litchfield Street, Torrington, CT - 1/1/81 (L)
Cyril C. Blaney, 3203 Main Street, Bridgeport, CT 1/1/81 (F)
Robert B. Boyd, 25 Fair Street, Wallingford, CT 1/1/81 (NH)

Arthur A. Buscemi, The Pillars, RFD #4, Brookfield, CT - 1/1/81 (F)
Maximilian A. Crispin, 1411 North Flagler Drive, West Palm Beach, Florida - 1/1/81 (H)
Albert W. Dautrich, Box 84, Goshen, CT 1/1/81 (L)
Albert M. DeTora, 22 Quinn Street, Stafford Springs, CT - 1/1/81 (T)
Elinor F. Downs, Stoneleigh-Alger Court, Bronxville, CT - 1/1/81 (L)
James J. McKeon, 1828 Dixwell Avenue, Hamden, CT - 1/1/81 (NH)
Gerald V. Mitchell, 185 Albert Street, Torrington, CT 1/1/81 (L)
Earl J. Rhoades, 111 Park Street, New Haven, CT 1/1/81 (NH)
Samuel A. Robb, 290 Dexter Avenue, Meriden, CT 1/1/81 (NH)
Ned M. Shutkin, 2 Church Street South, New Haven, CT - 1/1/81 (NH)
William F. Van Eck, 300 Main Street, East Haven, CT - 1/1/81 (NH)
Gertrude J. Vermande, 300 Main Street, East Haven, CT - 1/1/81 (NH)
Raymond Yesner, V.A. Hospital, West Haven, CT 1/1/81 (NH)

**Date and Time of Semi-Annual Meeting. HOD**

It was VOTED to set the time of the Semi-Annual Meeting to be held on November 18, 1981, at the Ramada Inn, North Haven, as follows:

Registration — 12:00 Noon
Call to Order— 12:30 P.M.
Sandwiches will be available.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on November 18, 1981. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

## NOTICE TO CONTRIBUTORS

Members of the Connecticut State Medical Society reading papers before other organizations are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult INFORMATION FOR AUTHORS. This material may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Please send them to:
J. Alfred Fabro, M.D., Editor
*Connecticut Medicine*
160 St. Ronan Street
New Haven, Connecticut 06511

# IN MEMORIAM

**BADAN, BOHODAR,** Graz Medical School, Austria, 1958. Dr. Badan was a anesthesiologist in the Fairfield area since 1962. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association, Dr. Badan died July 12, 1981, at the age of 57.

**COREY, WALTER VAN A.,** George Washington Medical School, 1933. Dr. Corey was a specialist in preventive medicine in the New Haven area since 1934. He had an office in Hamden for more than 47 years, and served as medical director at the Arden House in Hamden. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Corey died July 7, 1981, at the age of 76.

**GILBERT, ROGER K.,** Cambridge University, 1954. Dr. Gilbert was a pathologist in the New Haven area since 1960. Dr. Gilbert was a governor of the College of American Pathologists which last fall gave him its first meritorious service award. He was a past president of the Connecticut Society of Pathologists and a clinical professor of pathology at Yale Medical School. He was also director of laboratory medicine at Waterbury Hospital for several years and was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Gilbert died June 29, 1981, at the age of 51.

**GUIDA, FRANCIS P.,** Yale Medical School, 1934. Dr. Guida was a ophthalmologist in the New Haven area since 1935. He served as a lieutenant commander during World War II from 1943 to 1946. Dr. Guida was an associate clinical professor at Yale-New Haven Hospital, chief of ophthalmology at St. Raphael's Hospital and consultant at Milford Community Hospital. He was consulting ophthalmologist for Connecticut Board of Education for the Blind, and consultant at Fairfield State Hospital. He was a member of the New Haven County Medical Association, a 40-year member of the Connecticut State Medical Society and a member of the American Medical Association. Dr. Guida died August 5, 1981, at the age of 71.

**KARPE, RICHARD,** University of Prague. Czechoslovakia, 1924. Dr. Karpe was a psychiatrist in the Hartford area since 1943. He was an assistant professor of psychiatry at the Yale University School of Medicine and was a member of the American Psychiatric Association, and also a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Karpe died June 28, 1981, at the age of 83.

**SMITH, JASPER A.,** Case-Western Reserve University, 1935. Dr. Smith was a cardiologist in the New Haven area since 1946. He served in the U.S. Army Medical Corps and was assigned to the Station Hospital at Camp Edwards, Mass. as assistant chief of the Cardiovascular section before overseas duty in the European Theater in 1943. He retired from the service as a major. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Smith died August 13, 1981, at the age of 72.

**SULZYCKI, M. MICHAEL,** Georgetown Medical School, 1943. Dr. Sulzycki was a general practitioner in the Fairfield area since 1943. In 1969 he began working on the emergency staff at St. Vincent's Medical Center full time, leaving his private practice. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Sulzycki died June 24, 1981, at the age of 62.

**WENER, WILLIAM V.,** McGill University, 1927. Dr. Wener was a surgeon in the New London area since 1932. Dr. Wener had retired from the medical staff at Norwich Hospital in 1973 after serving there for 13 years. Previously he had been on the surgical staff at the Backus Hospital from 1928 to 1964. Dr. Wener was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Wener died July 12, 1981, at the age of 76.

---

## Exposure of U.S. Veterans at Hiroshima and Nagasaki

A National Research Council panel has concluded that it is "extremely unlikely that any detectable disease" from radiation exposure has occurred in U.S. occupation troops who were stationed in or near Hiroshima or Nagasaki shortly after atomic bombs were dropped there 35 years ago.

Scientifically valid studies of veterans' health records since then would be "impractical," and while mortality studies could be done, the panel told the Defense Nuclear Agency (DNA) that "such studies appear to carry inordinate cost in relation to the potential benefit."

The DNA asked the Research Council to assess the desirability and feasibility of performing epidemiologic studies of veterans, following veterans' allegations of increased cancer rates as a result of their exposure to radiation in the bombed Japanese cities.

Three types of evidence led the panel to conclude that detectable health effects would be extremely unlikely:

The nature of troop activities in the bombed areas kept the received doses small;

Even worst-case estimates of doses received led to small possibilities of radiation-related disease;

Studies of Japanese who were early entrants into the bombed cities have shown no increase in cancer mortality, despite their earlier, more intimate, and more prolonged involvement, when compared with U.S. troops.

Among the problems cited in the panel's report is the dual difficulty of locating veterans 35 years after the fact, and then tracking down hospital records in the systematic fashion required for a sound epidemiologic study. "Records of morbidity (illness) in this population are just not available," states the report.

Furthermore, "the expected number of radiation-induced cancers would be very small, relative to the number of spontaneous tumors," states the report. "No study of the population in question could detect effects that would be predictable from existing knowledge of health hazards associated with radiation exposure."

As an example, the report cites the hypothetical case of a population of 20,000 exposed to 100 millirems, the presumed "worst case" radiation dose for most Hiroshima and Nagasaki veterans—roughly equivalent to the average background dose a person receives in a year from natural sources. Such a population, states the report, would have no more than one additional fatal cancer over its collective lifetime as a result of the additional exposure. Normally, that group of 20,000 would develop some 4,000 tumors anyway, some of which would be fatal.

The panel noted that allegations have been made that Hiroshima and Nagasaki veterans have suffered an excess number of cases of multiple myeloma—a bone marrow cancer with a high mortality rate that has been associated with radiation exposure in other groups. "(E)ven if an excess number of cases of multiple myeloma is present in this population (of veterans), it is unlikely to be attributable to ionizing radiation," said the panel.

During its study the panel of the Research Council's Committee on Epidemiology and Veterans Follow-up Studies received information from veterans' groups, the DNA, the National Cancer Institute, and the Radiation Effects Research Foundation—the group which has been studying the Japanese atomic bomb survivors since the end of WWII.

The Panel on Feasibility and Desirability of Performing Epidemiological Studies on U.S. Veterans of Hiroshima and Nagasaki, located in the Research Council's Assembly of Life Sciences, was chaired by Brian MacMahon, department of epidemiology, Harvard School of Public Health. Other members were: Robert E. Anderson, department of pathology, University of New Mexico; John A. Auxier, industrial safety and applied health physics, Oak Ridge National Laboratory, Oak Ridge, Tenn.; Stuart C. Finch, department of medicine, Rutgers University Medical School; Alun R. Jones, Chalk River Nuclear Laboratories, Atomic Energy of Canada, Ltd., Chalk River, Ont.; Arthur C. Upton, department of environmental medicine, New York University Medical Center.

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### FAMILY PRACTICE

Solo practice available. Plan to retire within the next year. Call J. Chasnoff, M.D., West Haven, 934-1115. Excellent practice. Central location.

Retiring general practitioner leasing fully equipped office and practice in seashore town near Norwalk. Write: CSMS, GP/RS.

Primary Care Physician. Central Fairfield County location. Accessible to 2 hospitals. Rapidly developing community. No M.D.'s in area. Excellent opportunity for one or two-man office. Write or call Dr. Bernard S. Unger, Appletree Lane, Norwalk, CT 06850, 203-847-3065, 203-544-8219.

### INDUSTRIAL AND INSTITUTIONAL MEDICINE

University Connecticut. Physician, primary care to 16,000 students. Requirements include recent active primary care of young adults; ability to co-work with nurse practitioners; compatibility and congeniality in group setting; sensitivity to college student needs; Connecticut MD license and DEA. Night and weekend rotation. Position full time with State fringe, retirement, plus salary $35,000. To be filled September 1981 or soon thereafter. Respond to Edward Wandersee, M.D., Medical Director, University of Connecticut, U-11, Storrs, CT 06268.

### INTERNAL MEDICINE

Internist or Family Practitioner to associate with same in Manchester, CT. 40 hours per week, high salary, no expenses other than malpractice insurance and BC/BS. Call 646-1900 for appointment.

Internal Medicine Practice and Building for sale. Newly renovated, fully equipped. Call (203) 521-1611 or 233-6343.

ONCOLOGIST/HEMATOLOGIST. Central Connecticut suburban setting in rapidly expanding community. UConn and Yale Medical Centers easily accessible. Excellent community hospital with a wide range of ancillary services. Medical Staff of General/Family Practitioners and multiple specialties. Financial assistance provided. Write: Director, Bradley Memorial Hospital, Meriden Ave., Southington, CT 06489; or call 203-621-3661 Ext. 331.

### OBSTETRICS & GYNECOLOGY

Young, board certified or eligible to join established group by July, 1982, South Eastern Connecticut. Send curriculum vitae to CSMS/OB-GYN:FRB.

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### FAMILY PRACTICE

Immediately available. Age 39. Connecticut License. MD, Univ. Hospital, Wales, England; Int., S.U.N.Y. at Stony Brook; Res., South Nassau Hospital (SUNY affiliated). FLEX; AB elig. Solo, group, assoc. or institutional practice in medium community—Fairfield County preference. Write: S. David Kogut, M.D., 108 John St., Garden City, NY 11530.

### FAMILY PRACTICE

July '82. Age: 29. MD, Brown Univ., Int. & Res., Memorial Hosp., Pawtucket, RI. Presently in practice. Nat'l bds; AB cert. Small to medium solo, group or assoc. practice. Has 2 years of practice post residency; clinical preceptor in family practice at Medical Univ. of SC, Charleston, SC. Write: Steven C. Flood, M.D., 3-B Marsh Harbor, Lady's Island, Beaufort, SC 29902.

### INTERNAL MEDICINE

PULMONARY MEDICINE. July '82. Age 29. MD, Punjab Univ., India; Int. and Res., St. Francis General Hospital, Pittsburgh, PA. AB cert. (internal medicine); AB elig. (pulmonary medicine). Prefer medium to large, solo group or assoc. practice. Write: Surinder K. Aneja, M.D., 90A Garden Vill Drive, Apt. #4, Cheektowaga, NY 14227.

July '82. Allergy/Immunology. Age 31. MD, New York University School of Medicine; Int. and Res., Bellevue-NYU Medical Center; Fellowship, Barnes Hospital, Washington University Medical Center. Nt'l bds; AB cert. (internal medicine), elig. (allergy). Solo, group, associate or institutional practice preferred in large community. Write: Leonard Cohen, M.D., Ph.D., 7545 York Drive, Clayton, MO 63105.

GASTROENTEROLOGY. July '82. Age 30. Nat'l bds.; AB-cert. MD, Chicago Medical; Int. & Res., Beth Isreal Med. Center; Fellowship, Bridgeport Hosp. Has extensive clincial exposure and primary patient care. Group or solo practice preferred. Contact: Alan J. Greenwald, M.D., 51d Wedgewood Drive, Stratford, CT 06497.

CARDIOLOGY. July '82. Age 30. MD, Baroda Medical College, India; Int. Beckman Downtown Hosp., NY; Fellowship, Good Samaritan Hosp., Phoenix, AZ. AB cert. Medium to large community in solo, group, assoc., or institutional type practice. Prefers invasive or noninvasive cardiology. Contact: Raj Savajiyani, M.D., 3807 N. 30th St., #25, Phoenix, AZ 85016.

July '82. Age 29. MD., B.J. Medical College, Ahmedabad, India, Int., Civil Hospital, Ahmedabad, India; Res., Helene Fuld Medical Center, Trenton, NJ and Hahnemann Medical College, Philadelphia, PA; Fellowship, Cardiology, Washington Univ. Medical Center and The Jewish Hospital, St. Louis, MO. FLEX; AB cert. Medium to large solo, group or associate practice. Write: Bharat J. Shah, M.D., 7767-B Charing Square, St. Louis, MO 63119.

HEMATOLOGY-ONCOLOGY. Sept. '81. Age 32. MD, Seth G.S. Med. College, Bombay, India. Int., Res., (Internal Medicine) and Fellowship, (Hem/Onc.) all at the VA Hospital, Northport, NY. AB cert. Presently, full-time staff physician. Medium, large, group or assoc. practice preferred. Write: INT/BJS, c/o CSMS.

HEMATOLOGY-ONCOLOGY. July '82. Age 29. MD, New York Med. College. Int. & Res., Long Island Jewish Med. Center. Nat'l bds; AB cert (Internal Medicine), AB elib. (Hem./Onc.). Fellowship, Albany Medical College. Group or Assoc. practice. Write: Michael Willen, M.D., 164 Homestead Ave., Albany, NY 12203.

CARDIOLOGY. July '82. Age: 27. Nat'l bds. AB cert. MD, New York Medical College; Int., Res. and Fellowship, Beth Israel Medical Center, NYC. Group or associate practice preferred. Write: Harold S. Wilkes, M.D., 350 East 17th St., Apt. 9D, New York, NY 10003.

COLUMBIA UNIVERSITY, COLLEGE OF PHYSICIANS & SURGEONS announces the following postgraduate medicine courses. Each course has been approved for the designated number of credit hours in Category 1, A.M.A.'s P.R.A. Contact: Dr. Elizabeth C. Gerst, Director, Continuing Education Director, 630 West 168th Street, New York, N.Y. 10032; telephone (212) 694-3682.

**Advances in Surgical Pathology (5th Annual Course),**
October 12-14, 1981 (Monday-Wednesday).
Fee: $300 (or $125/day); Resident's Fee: $150 (or $60/day), includes syllabus and luncheons. 21 Credit Hours. Directors: Cecilia Fenoglio, M.D. and Luciano Ozzello, M.D.

**Immunodiagnosis of Allergic, Rheumatic and Infectious Diseases,**
October 15 & 16, 1981 (Thursday & Friday) at the New York Academy of Medicine.
Fee: $200; Resident's Fee: $100, includes syllabus and luncheons. 15 Credit Hours. Directors: Michael H. Grieco, M.D. and Stanley R. Fine, M.D.

**Renal Biopsy in Medical Diseases of the Kidney,**
October 19-23, 1981 (Monday-Friday).
Fee: $495; Resident's Fee: $245, includes syllabus, Kodachrome slides, electronmicrographs of "classic" renal lesions, luncheons and continental breakfasts. Director: Conrad Pirani, M.D.

**21st Annual Review Course in Obstetrics and Gynecology,**
October 26-30, 1981 (Monday-Friday).
Fee: $450; Resident's Fee: $225, includes syllabus and luncheons. 35 Credit Hours; 35 Cognates (A.C.O.G.); 35 Elective Hours (A.A.F.P.). Director: Raymond L. Vande Wiele, M.D.

**Workshop on Thyroid Disease: 6th Annual Workshop of the American Thyroid Association,**
November 5 & 6, 1981 (Thursday & Friday) at the New York Academy of Medicine.
Fee: $250, includes syllabus, luncheons and reception. 16 Credit Hours: (A.A.F.P. credits pending). Directors: C.R. Feind and members of the A.T.A. Education Committee.

**Recent Advances in Dementia,**
November 19 & 20, 1981 (Thursday & Friday).
Fee: $220; Resident's Fee: $110; Ph.D.'s Fee: $125. 14 Credit Hours. Directors: Richard Mayeux, M.D. and Wilma Rosen, Ph.D.

**Principles and Techniques for the Use of External Fixation,**
November 21, 1981 (Saturday).
Fee: $100, includes course-related materials, workshop specimens, and luncheon. 8.5 Credit Hours. Director: S. Ashby Grantham, M.D.

**Symposium on Nutrition and Drugs,**
December 3 & 4, 1981 (Wednesday & Thursday) at the New York Statler Hotel.
Fee: $98, includes luncheon. 11 Credit Hours; 11 Elective Hours (A.A.F.P.); 11 Hours (American Dietetic Association). Director: Myron Winick, M.D.

**Continuing Education Program for Ophthalmologists, 1981-1982,**
Five Saturdays:
(A) Dec 5, 1981: *Intraocular Lenses;*
(B) Jan 9, 1982: *Lids and Lacrimal Glands:*
(C) Feb 6, 1982: *Lasers in Ophthalmology;*
(D) Mar 6, 1982: *Instruments in Ocular Surgery;*
(E) Apr 3, 1982: *Strabismus.*
Fee: $100/session; Resident's Fee: $30/session, includes luncheons. 7 Credit Hours each Session. Director: R. Linsy Farris, M.D.

**Postgraduate Review Course in Urological Pathology and Diagnostic Radiology,**
January 13-17, 1982 (Wednesday-Sunday).
Fee: $450, includes continental breakfasts, luncheons and pathology and radiology Kodachrome slides. 40 Credit Hours. Director: Myron Tannenbaum, M.D., Ph.D.

INFECTIOUS DISEASES. July '82. Age 33. MD, Catholic Univ. of Louvain, Belgium; Int., St. John Hospital, Detroit; Res., Baystate Medical Center, Springfield, MA; Fellowship, Infectious Diseases at Brown Univ., Providence, RI. FLEX. AB cert. Large group, assoc. or institutional practice preferred with emphasis on infectious diseases. Write: Louis A. Schenfeld, M.D., 369 Morris Ave., Providence, RI 02906.

CARDIOLOGIST. Jan. '82. Age 31. Presently in practice. Connecticut license. Nat'l bds.; AB cert.; MD, NY Univ.; Int. & Res., Brookdale Hosp. Center; Fellowship, Medical College of Georgia. Medium, solo, group or institutional practice preferred. Write: Jay I. Kipoff, M.D., 214 E. Spooner Rd., Milwaukee, WI 53217.

July '82. Age: 28. Nat'l bds; AB cert.; MD, Loyola Univ./Stritch School of Medicine; Int. and Res., Beth Israel Hospital, NY City; Fellowship, George Washington University. Group, assoc. and institutional practice preferred in medium to large community. Some Endocrinology preferred and/or association with a teaching institution. Write: Jonathan R. Anolik, M.D., 6107 Breezewood Court, # 203, Greenbelt, MD 20770.

ENDOCRINOLOGY AND DIABETES. July '82. Age: 29. Nat'l bds AB cert. MD, University of Pennsylvania; Int. and Res., Albany Medical Center; Fellowship, Montefiore Hospital and Medical Center. Medium to large, group or assoc. practice. Write: CSMS/IM:KWO.

## NEUROLOGY

Available immediately. Age: 45. Licensed in Connecticut. Presently in practice. Nat'l bds; AB cert.; M.D., Albany Medical College; Int., Washington Univ. Medical Service; St. Louis City Hospital; Res., Barnes Hospital, Washington Univ. Medical Center; Fellowship, Mt. Sinai, NY and Albert Einstein Medical Center. Prefers medium, solo practice but is flexible. Write: CSMS: NEUR/RC.

July '82. Age 33. MD, Univ. of Bologna, Italy; Int., Nassau Hospital, NY; Res., Univ. of Miami/Jackson Memorial Hosp., Miami. AB cert. Solo, group or assoc. practice in medium size community desired. Write: CSMS: NEUR/JM.

July '82. Age 28. MD, Albany Medical College; Int. and Res., Albany Medical Center Hospital. Nat'l bds; AB elig. Group, assoc. or institutional practice. Write: Dennis D. Dewey, M.D., 32 B King Court, Selkirk, NY 12158.

## OBSTETRICS/GYNECOLOGY

July '82. Age: 29. Nat' bds. AB-elig. MD, Loyola University, Chicago. Int. & Res. Michael Reese Hosp. & Med. Center. Group or assoc. practice preferred. Must be within 1 hour drive of suitable residency (in Pathology) for spouse. Contact, Karol J. Chacho, M.D., 1170 B. Bunker Hill Ct, Wheaton, IL 60187.

July '82. Age 31. MD, NJ College of Medicine; Int., Brooke Army Med. Center; Res., Women and Infants Hospital, Providence, RI. Nat'l bds; AB elig. Especially interested in infertility and reproductive endocrinology. Solo or group practice. Write: Myles E. Dotto, M.D., 44 Lyndhurst Ave., Providence, RI 02908.

Oct. '81. Age: 39. Presently in practice. FLEX. AB elig.; MD, Univ. of The Philippines; Int., Coney Island Hospital; Res., Maimonides Medical Center, NY; Fellowship, Coney Island Hospital, NY. Group, assoc. or institutional practice preferred. Write: CSMS: OBGYN/ES.

## OPHTHALMOLOGY

July '82. Age: 32. Presently in practice. Nat'l bds. AB cert. MD, Univ. of Vermont Medical College, Burlington; Int., Brooke Army Medical Center, San Antonio, TX; Res., Walter Reed Army Medical Center, Washington, DC. Small, medium practice with solo, group, assoc. or institutional. Write: R. Jeffrey Bergquist, M.D., 73 Apple St., De Ridder, LA 70634.

## OTOLARYNGOLOGY

Available Aug. '82. Age. 32. Currently in practice. Nat'l bds.; AB-cert. MD, Temple; Int. & Res., Philadelphia Naval Hosp.; Fellowship, Fitzsimons Army Medical Center, Denver, CO. Special interests in Otology and Cosmetic Surgery—broad experience in all phases of ENT. Medium to large solo, group or assoc. practice preferred. Write: Donald V. Wilson, M.D., 20 Lahiki Circle, Aiea, Hawaii 96701.

## PATHOLOGY

Three months notice. Age: 49. Currently in practice. AB cert. MD, Yonsie Univ. School of Medicine, Korea; Int. and Res., Memorial Hospital, RI. Solo, group, assoc. or institutional practice preferred. Willing to work as a full-time pathologist or as a combination of part-time pathologist and part-time general practitioner. Write or call, Won Pil Chung, M.D., 2 University Place, Orono, ME 04473, 207-866-2578.

CLINICAL PATHOLOGY & BLOOD BANK. Aug. '81. Age 31. MD, Vanderbilt. Int., Tampa VAH (Path.); Res., George Washington Hosp. (Clinical Path.); Fellowship, NY Blood Center. Nat'l bds; AB cert. Write: Daniel Williams, Jr., M.D., 77 Rippowam Rd., Apt. A, Stamford, CT 06902.

## PEDIATRICS

Available immediately. Age 46. MD, University of Heidelberg, Germany. Int., Fitkin Memorial Hosp., NY; Res. Children's Hosp of Washington, DC and Univ. of Bonn, Germany; Fellowship, Pediatric Hematol/Oncol., Univ. of Michigan. Nat'l bds. FLEX; AB cert.; Group, assoc., or institutional practice. Prefers part or full time close to shoreline area. Write: CSMS/PED/GTL

Available immediately. Age 46. MD, Buenos Aires Med. School; Int., New England Hospital for W; Res., Sinai Hosp.; Fellowship, Metropolitan Hosp. Presently in practice. AB elig. Group and/or assoc. medium practice. Write: CSMS, PED/JT.

Oct. '81. Age: 32. Connecticut License. Nat'l bds; AB cert.; MD, Tuft's Medical School; Int. and Res., Rhode Island Hospital, Providence, RI. Presently in practice. Group or institutional practice preferred. Write CSMS PED/BS.

Oct. '81. Age: 29. Connecticut license. FLEX. AB elig. MD, Univ. of Tennessee; Int. Univ. of Louisville; Res., Univ. of Connecticut. Prefers part-time, night call, clinical work, hospital based, Pediatric Emergency Room or industrial practice. Write: Stanley E. Whittenburg, M.D., 15 Charter Oak Place, Hartford, CT 06106.

## RADIOLOGY

DIAGNOSTIC RADIOLOGY. July '82. Age 29. MD, St. Louis University School of Medicine; Int., Rhode Island Hospital, Providence; Res., Hartford Hospital, Hartford; Fellowship, Dept. of Nuclear Medicine, University of Conn. Health Center, Farmington. Nat'l bds; AB cert. Group practice preferred. Write: CSMS/RAD/DMR.

## SURGERY

Aug. '82. Age 38. MD, Medical College of Pennsylvania; Int. and Res., Walter Reed Army Med. Center. Presently in practice. Nat'l bds. AB cert. Group or assoc. practice preferred in medium community. Write: Francis W. Conn, M.D., 37 Birch Drive, DeRidder, LA 70634.

Aug. '82. Age 30. MD, Univ. of Puerto Rico. Int. & Res., State Univ. of NY at Stony Brook; Fellowship, Allentown and Sacred Heart Hosp. Center. Nat'l bds. Medium to large, group or assoc. practice in General Surgery and Peripheral Vascular Surgery preferred. Write: Ruben J. Delgado, M.D., 293 First St., Mineola, NY 11501.

## UROLOGY

Available immediately. Age 31. Nat'l bds; AB elig. MD, The M.S. Univ. of Baroda, India; Int. and Res., The Maimonides Med. Center, Brooklyn; Fellowship, The Hospital for Sick Children, Toronto, Canada. Solo, group, assoc. or institutional practice preferred. Write: Dilip R. Patel, M.D., 483 Ocean Pkwy. #4-B, Brooklyn, NY 11218.

Available immediately. Age: 50. Presently in practice. AB cert.; MD, University of Naples Medical School, Naples, Italy; Int. Fort Sanders Presb. Hospital, Knoxville, TN; Res., St. Sacrement Hospital, Quebec and NY Medical College. Solo, group or assoc. practice. Write: Alessandro Colalillo, M.D., P.O. Box 68, Freeport, IL 61032.

## SPECIAL NOTICE

Connecticut Chapter, Arthritis Foundation
Section of Rheumatology
Norwalk Hospital

Present a

**SYMPOSIUM ON ARTHRITIS
UPDATE ON JOINT DISEASE — 1981**

**Wednesday, November 11, 1981
12:30 to 5:30 P.M.**

---

15¼%

Tax-Sheltered
*with*
Tax-Free Return

*Call Collect*
236-4228

**HOWARD
FINANCIAL
GROUP**

*1100 New Britain Avenue
West Hartford, CT 06110*

---

# CLASSIFIED

Rental space available in newly constructed office building; desirable North end location (just North of Commerce Park, Main Street, with easy access to Merritt Parkway). Approximately 2000 square feet; all or part available. Building houses two family-practice physicians with adequate off-street parking. Call 371-0076.

PLAINVILLE, CT. Prime office space is available for medical professionals in a new contemporary Professional Center. Up to 1700 sq. ft. Location makes this superior. On Rt. 10. 793-0346, 747-9253.

### CLASSIFIED ADVERTISING RATES

$40.00 for 25 words or less; 50 cents for each additional word.

$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.

No agency commission on classified advertising.

Closing date: Copy must be received by the first day of month preceding month of issue.

A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE.* The *JOURNAL* does not hold itself responsible for statements made by any contributor.

REPRINTS are available at an established schedule of costs. A reprint rate and order form is sent to the author with his page proofs.

ALTHOUGH all advertising material accepted is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to:
*CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

*CONNECTICUT MEDICINE* is the official publication of the Connecticut State Medical Society, a voluntary non-profit association organized for scientific and educational purposes, published monthly for members of the Connecticut State Medical Society.

# Transpericardial Stab Wound of the Hepatic Veins Giving Rise to Cardiac Tamponade

## Case Report and Review of the Management of Liver Injuries

RICHARD S. STAHL, M.D., JAMES L. SKYDELL, M.D.
AND BARBARA K. KINDER, M.D.

**ABSTRACT—Liver injury mortality rates have been markedly reduced in the last four decades. Hepatic venous and retrohepatic vena caval injuries continue to be deadly, however. An example of the successful treatment of such an injury is presented and the treatment of the liver injuries, in general, reviewed.**

### Introduction

The size, consistency, location and blood supply of the liver make it particularly vulnerable to blunt and penetrating injuries. Improvements in transportation of injured patients, anesthesia, antibiotics, resuscitative techniques, and vascular surgery have reduced the 70% liver injury mortality rate of the 1940's to 15%.[1]

Select hepatic injuries, especially involving the hepatic veins or retrohepatic vena cava, however, continue to be highly lethal despite the use of aggressive techniques of vascular exclusion and hepatic resection. An illustrative case emphasizes an orderly approach to the management of such injuries.

### Case Report

A 21 year old white male was admitted to the Yale-New Haven Hospital Emergency Service with a stab wound of the epigastrium. (Figure 1) Initial vital signs, abdominal exam and chest x-ray were normal.

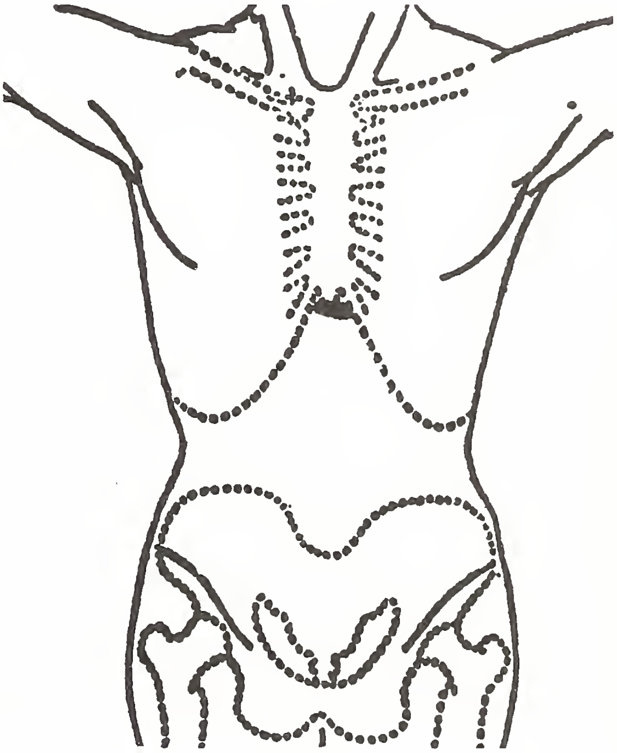


Figure 1
Epigastric stab wound giving rise to hepatic vein injury and cardiac tamponade.

Fifteen minutes after arrival the patient experienced a transient episode of arterial hypotension and venous hypertension, associated with diaphoresis, agitation, and cyanosis. With crystalloid and type-specific blood being rapidly administered, the patient was rushed to the operating room.

Median sternotomy and pericardial exploration revealed profuse bleeding from a diaphragmatic-inferior pericardial laceration. There were no cardiac injuries however.

---

RICHARD S. STAHL, M.D., Chief Resident and Instructor; JAMES L. SKYDELL, M.D., Assistant Resident; BARBARA K. KINDER, M.D., Assistant Professor of Surgery; all of the Section of General Surgery, Department of Surgery, Yale University School of Medicine and Yale-New Haven Hospital.

Presented at the December, 1980 meeting of the Connecticut Society of American Board Surgeons, Farmington, CT.

Reprint requests to: Department of Surgery, Yale University School of Medicine, 333 Cedar St., New Haven, CT 06510 (Dr. Kinder).

A mid-line abdominal incision was consequently performed with control of the hemorrhage achieved by digitalization of the diaphragmatic-pericardial laceration. Since no intra-abdominal bleeding was found, the ligamentous attachments of the liver and the central tendinous portion of the diaphragm were incised to expose a suspected retrohepatic injury.

Hepatoduodenal ligament occlusion, the Pringle Maneuver, failed to diminish the massive blood loss. Digital control of this laceration of the bare area of the liver was therefore maintained while the overlying liver substance was divided to further expose the hepatic veins and vena cava.

Any attempt at relinquishing digital control and directly visualizing the region of injury resulted in profuse blood loss. Vascular exclusion of the liver was consequently initiated by placement of a cavohepatic shunt via the right atrial appendage and the Pringle Maneuver.

With the rate of blood loss thus reduced to a modest amount, it was determined that the junction of the left and middle hepatic veins was lacerated at its entrance to the inferior vena cava. After obturation of the laceration with a Foley catheter, definitive repair was accomplished. The mediastinum and abdominal cavity were drained and closed after exploration of the abdomen confirmed no further injury.

Steroids, dextrose, sodium bicarbonate and hypothermia were employed intraoperatively for hepatic preservation. Broad spectrum antibiotics were administered peri-operatively as well. Transfusion requirements were 15 units of blood, 4 units of frozen plasma, and 7 units of platelets. Systemic heparinization was initiated prior to implementation of autotransfusion and placement of the intracaval shunt.

By the second post-operative day, the patient's liver function tests had returned to normal. He continued to have an uneventful post-operative course, and two weeks post-operatively, he was discharged. The patient developed a transient hepatitis four months later.

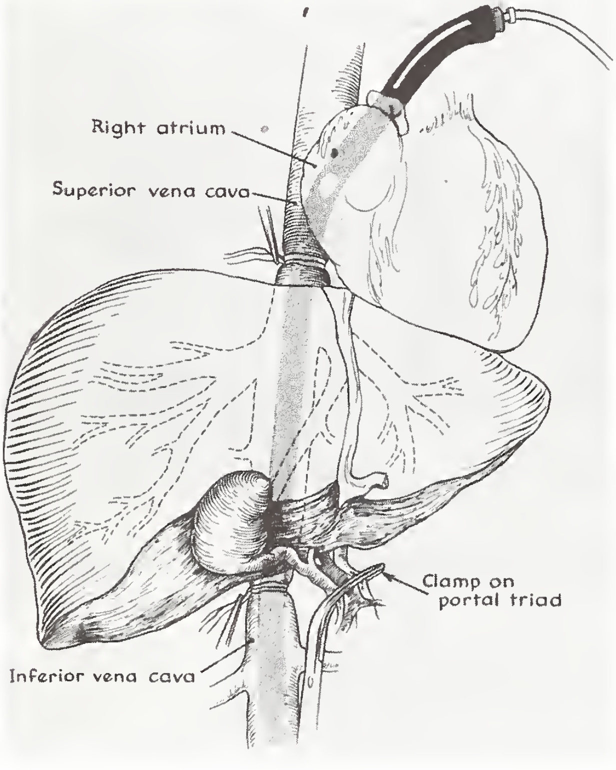


Figure 2
Transatrial cavohepatic shunt (Reproduced with permission, *Trauma to the Liver,* 2nd Edition, Madding GF and Kennedy PA, W.B. Saunders Co, 1971).

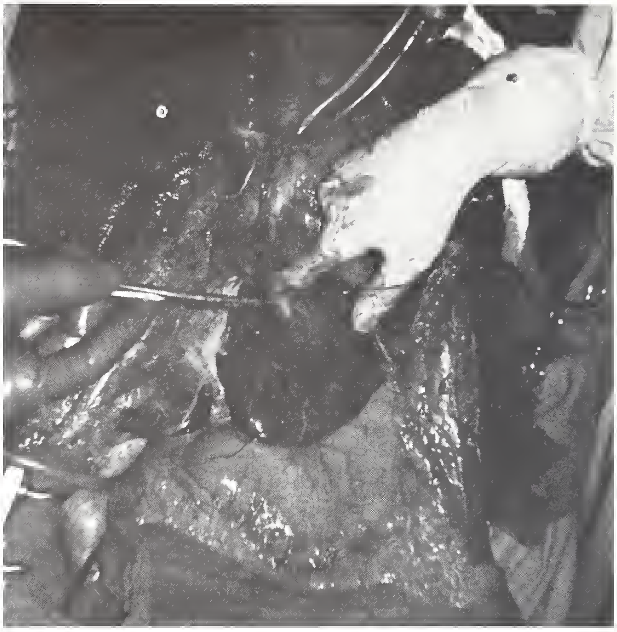


Figure 3
Cavohepatic shunt entering right atrial appendage as digital control of hepatic vein laceration is maintained. Note the pallor of the liver during this period of hepatic vascular exclusion.

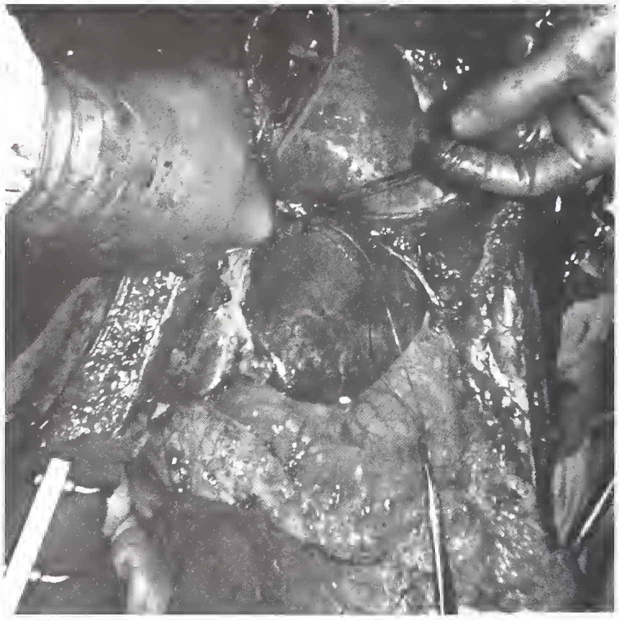


Figure 4
Direct suture repair of hepatic vein laceration is accomplished.

## General

The number of liver injuries in some centers has increased tenfold in the last 4 decades. Especially troublesome is the increase in the proportion of blunt as well as high-velocity penetrating injuries. While the mortality of hepatic trauma varies with mechanism of injury, it is known to be greatest with shotgun blasts. Other gunshot wounds, blunt trauma, and stab wounds have a decreasing order of mortality.[2]

The spectrum of hepatic trauma ranges from small lacerations or hematomas to more serious injuries, such as actively bleeding missile tracts, extensive lobar trauma or avulsion of vessels. Especially feared are hepatic vein or retrohepatic vena caval injuries. Blunt injury to these vessels is associated with an 80 to 100% mortality.

Successful treatment of hepatic trauma requires early diagnosis. While many patients present with classical signs of intraperitoneal hemorrhage, some arrive with normal vital signs and suddenly deteriorate.

Pre-operative preparation should include evaluation of injuries to other organ systems, adequate volume repletion, ventilation, careful monitoring of the urine output, venous pressures, and arterial blood gases. Venous access should be limited to the upper extremities and the neck, and blood products filtered. Similarly, broad spectrum antibiotics should be administered pre-operatively. Equipment should be readied for intra-operative cholangiography and regulation of the patient's temperature as well.

The maintenance of an orderly pre-planned course of operative action cannot be over emphasized.[2, 3, 4, 5] Other axioms of contemporary liver trauma treatment are the achievement of adequate exposure, debridement of devitalized tissues, conservation of viable hepatic tissue, precise vascular and biliary control, and adequate drainage. Unless there is extra-hepatic biliary injury, T-tube placement is now known to predispose to complications.

Fifty percent of laparotomies for liver trauma reveal small lesions not actively bleeding.[2] These may simply be drained. If, however, bleeding persists or the injury appears to be of significant size or depth, gentle compression or packing should be performed until the patient can be stabilized. At this point, cautious surgical enlargement of the hepatic lesion and precise ligation of the injuried vessels or bile ductules is indicated. Superficial oozing injuries may be controlled with interlocking horizontal mattress sutures and topical hemostatic agents. Mass suture of large lacerations, however, may cause cavitation and necrosis with secondary hemorrhage, sepsis, or hemobilia.

When arterial bleeding is persistent and not associated with extensive parenchymal damage that would require resection, selective hepatic artery ligation should be considered.[2] Hepatic ischemia though, is poorly tolerated in the presence of contamination or hypotension. The division of ligamentous attachments to the liver, often necessary for surgical exposure, diminishes the routes by which collateral circulation can develop. Furthermore, up to one-third of patients undergoing hepatic artery ligation will experience recurrent bleeding.[6]

When segmental or lobar damage is so great that the tissue is not deemed salvageable by other methods, resectional therapy with finger fracture and direct ligation of individual vessels may be performed. The current role of resection, however, is considered to be small.[2] If all else fails, bleeding may be tamponaded by autogenous omental packs[7] or, as a last resort, gauze packing.

Familiarity with several techniques may be of great utility to the surgeon faced with liver trauma. The Pringle Maneuver, occlusion of portal structures in the hepatoduodenal ligament or aortic-caval crossclamping may be useful in the temporary control of hemorrhage. Reflection of the right colon and the Kocher Maneuver, division of the hepatic ligaments, and the thoracic extension of the incision provide for improved exposure of retrohepatic injuries.

Most authors[2, 8] now agree that the sternotomy provides rapid and versatile access to the right heart, vena cava, and hepatic veins. Furthermore, it is felt to preserve pulmonary function by causing less damage to the diaphragmatic musculature and innervation than a standard thoracoabdominal incision.

In select cases of major venous injury, placement of a transatrial or transcaval cavohepatic shunt may be necessary in addition to a Pringle Maneuver.[9] Additional obturation of the laceration may be required to stop retrograde bleeding from multiple non-hepatic venous tributaries of the retrohepatic vena cava. This may be performed with the Foley or Fogarty catheter. The liver substance is then divided anteriorly to gain approach to the injury.

During periods of induced ischemia of the liver, adequate hydration, glucose supplements, systemic steroids, topical or systemic hypothermia, and intermittent release of clamps will maximize hepatic preservation.

While the greatest morbidity is attributed to hemorrhage, multiple other complications, including infection and respiratory failure, may ensue. Other frequent complications include coagulopathy, pancreatitis, renal failure, peptic ulceration, hepatic dysfunction, and hemobilia.

Aggressive post-operative management therefore includes administration of clotting factors, vitamin K, glucose and protein supplements, vigorous pulmonary toilet, ulcer prophylaxis, and aggressive nutritional support. Adequate hydration, which may require Swan-Ganz catherization, will help maintain total hepatic and renal blood flow. Some feel that glucagon administration will further augment liver blood flow.[10]

In summary, a penetrating injury of the hepatic veins, giving rise to cardiac tamponade, is presented. Emphasis is placed on an organized preplanned approach to liver trauma, stressing exposure, debridement, precise vascular and biliary control, and drainage. In addition, methods of vascular exclusion may be employed in select cases.

*(The authors wish to acknowledge the invaluable contribution made by Dr. John Klay, Section of Cardiothoracic Surgery, Yale University School of Medicine, in the management of this case.)*

## REFERENCES

1. McInnis WD, Richardson JD, Aust JB: Hepatic Trauma - Pitfalls in Management. Arch Surg 112: 157-161, 1977
2. Walt AJ: The Mythology of Hepatic Trauma - or Babel Revisited. Am J Surg 135: 12-19, 1978
3. Elerding SC, Aragon GA, Moore EE: Fatal Hepatic Hemorrhage After Trauma. Am J Surg 138: 883-888, 1979
4. Aldrete JS, Halpern NB, Ward S, Wright JO: Factors Determining the Mortality and Morbidity in Hepatic Injuries - Analysis of 108 Cases. Ann Surg 189: 466-474, 1979
5. McMaster P, Tolley M: Management of Inferior Vena Caval Injury in Liver Trauma. Ann Roy Coll Surg 59: 502-506, 1977
6. Defore WW, Mattox KL, Jordan GL, Beall AC: Management of 1590 Consecutive Cases of Liver Trauma. Arch Surg 111: 493-497, 1976
7. Flint LM, Mays ET, Aaron WS, Fulton RL, Polk HC: Selectivity in the Management of Hepatic Trauma. Ann Surg 185: 613-618, 1977
8. Fullen WD, McDonough JJ, Popp MJ, Altemeier WA: Sternal Splitting Approach for Major Hepatic or Retrohepatic Vena Cava Injury. J Trauma 14: 903-911, 1974
9. Schrock T, Blaisdell FW, Mathewson C: Management of Blunt Trauma to the Liver and Hepatic Veins. Arch Surg 96: 698-704, 1968
10. Lim RC, Giuliano AE, Trunkey DD: Postoperative Treatment of Patients After Liver Resection for Trauma. Arch Surg 112: 429-435, 1977

---

# A Report of the Acute Spinal Cord Injury Center

FRANKLIN C. WAGNER, JR., M.D., BAHRAM CHEHRAZI, M.D.
AND WILLIAM B. STEWART, PH.D.

ABSTRACT—An injury to the spinal cord resulting in paraplegia or tetraplegia is devastating to the patient. Besides its physical and emotional impact it results in a tremendous economic loss to the individual and to society in general. In 1973 the Section of Neurosurgery at the Yale University School of Medicine undertook a study of the problem of acute spinal cord injury. Subsequently, a unit dealing with the epidemiological, management, and basic research aspects of spinal cord injury has been established. As with similar acute spinal cord injury centers at New York University, Ohio State University, the Medical University of South Carolina, and the University of Texas support has been provided by the National Institute of Neurological and Communicative Disorders and Stroke (NINCDS).

With the exception of certain demographic data and the need for preventing a secondary injury it was concluded on the basis of available evidence that most of what we have presumed to be true regarding spinal cord injury could not withstand scientific scrutiny. For this reason, attention has been directed to analyzing the care provided to patients with acute spinal cord injuries by neurosurgeons, orthopaedists, urologists, and physiatrists interested in the problem of spinal cord injury at the Yale-New Haven Medical Center. Among the protocols being tested are those assessing residual neurologic function, spinal column stability, and bladder function. While no formal transfer protocols have been developed, where it has been felt a patient with an acute injury would possibly benefit from care in the Unit, arrangements for his or her expeditous transfer have been made. The results of this approach are indicated by the following status report.

---

FRANKLIN C. WAGNER, JR., M.D., Associate Professor of Surgery. BAHRAM CHEHRAZI, M.D., Assistant Professor of Surgery. WILLIAM B. STEWART, Ph.D., Research Associate; all of the Section of Neurosurgery, Department of Surgery, Yale University School of Medicine.

This work was supported by Grant NS10174 from the National Institutes of Health.

Reprint requests to: Section of Neurosurgery, Department of Surgery, Yale University School of Medicine, 333 Cedar St., New Haven, CT 06510 (Dr. Wagner).

Spinal cord injuries continue to be a small but significant cause of neurologic disability. In spite of the energy situation and the 55 mph speed limit the rate of 5/100,000 population per year at which spinal cord injuries occur in the State of Connecticut has remained essentially the same within the last 5 years. Our Center had addressed this problem by attempting to identify factors which potentially may be significant in the individual spinal cord injured patient's morbidity and mortality. To do this we have undertaken studies having to do with the epidemiology, the clinical management and the basic pathophysiology of spinal cord injury. I thought it might be appropriate this morning to begin by relating how the management of a patient with an acute spinal cord injury has developed at this Center.

In the 306 patients with whom we have had experience at this Center and at other cooperating hospitals throughout Connecticut, 60% have had injuries involving the cervical spine, 20% have had injuries involving the thoracolumbar spine and the remaining patients have had injuries distributed between the thoracic and the lumbar spine. In 50% of the patients, there has been no evidence of sensation or movement below the level of their injury on presentation in the emergency room. In the remaining 50% of patients though, neurologic examination on admission to the emergency room has demonstrated evidence of either retained sensation and/or movement below the level of their injury. This is important because it has generally been held that the patient who has some evidence of retained sensation and/or movement below the level of his spinal cord injury has a better prognosis for neurologic recovery at some later time.

The terms that we frequently use to describe injuries to the spine are fracture or fracture dislocation. The orientation of the posterior lateral articulating facets in the cervical region make it possible for a dislocation to occur without an accompanying fracture. In the thoracic and lumbar region the facets have a more vertical orientation so that it is not as easy for the one vertebra to slip forward on the other as it is in the cervical area. In order for a dislocation to occur at the thoracic or the lumbar level it is necessary that a fracture be present as well.

The spinal cord may be injured in a variety of ways. It can be injured either by extrinsic compression, by vascular impairment resulting in an insufficient amount of blood reaching a portion of the spinal cord, or by intrinsic damage to the substance of the spinal cord itself. As an example of extrinsic compression the patient with an anterior cord syndrome is likely to have impaired movement or paralysis below the level of his injury. Due to pressure on the spinothalamic tract, the patient is likely to have impaired superficial pain and temperature sense. Since the posterior aspect of the spinal cord is not directly involved the patient may exhibit preservation of position and vibratory sense in his lower extremities. If, on radiographic examination, one indeed does find continuing compression of the spinal cord and it is relieved within a short period of time, it is likely the patient will then go on to make a significant neurologic recovery.

With hyperextension of the cervical spine the blood supply to the spinal cord may be impaired. The two vertebral arteries, which are responsible largely for supplying blood to the cervical spinal cord, eventually bend behind the posterior aspect of the first cervical vertebra before becoming intracranial. In that position they come into close relationship to the base of the skull, and when the spine is hyperextended, they may be compressed resulting in vascular insufficiency involving the cervical cord. The anterior spinal artery which ramifies within the substance of the spinal cord, supplying principally the portion of the white matter having to do with voluntary movement, is most likely to be involved. These patients, therefore, will have weakness which is greater in their upper extremities than in their lower extremities, but have preservation of both position and vibratory sense and pain and temperature sense. This is then an example of how the spinal cord may be injured on a vascular basis.

What we see more frequently in the emergency room at the Yale-New Haven Hospital is the central cervical cord syndrome due to intrinsic damage in the spinal cord rather than vascular insufficiency, as in the previous example. In the elderly patient there is likely to be pre-existing spondylosis or osteo-arthritis of the spine. This has the effect of narrowing the AP diameter of the spinal canal. The history frequently elicited is that the patient has gotten up during the night and fallen due to poor illumination. As he falls forward, he strikes himself on the forehead and throws his neck into hyperextension. With hyperextension the diameter of the spinal canal is further narrowed and the spinal cord is effectively squeezed and intrinsic damage occurs. As with the preceding group of patients, these patients are likely to have paralysis which is greater in their upper extremities than in their lower extremities but in contrast to the previous group where there is vascular insufficiency, these patients are likely to have impaired sensation in both position and vibratory sense as well as superficial pain and temperature sense.

It has been assumed that if there is continuing compression of the spinal cord produced by either bone or an acutely herniated disc and that if this compression can be relieved rapidly, the patient may experience a greater degree of neurologic recovery than might ordinarily be expected. This is what we have sought to test. We have adopted the approach, particularly in those patients who have an incomplete sensory and motor paralysis, that if the AP diameter of the spinal canal can be reconstituted and if any soft tissue compression that may persist even after the AP diameter of the spinal canal is reconstituted, is removed, that these patients will do better. This entails performing a careful neurologic evaluation in the emergency room to determine whether there is evidence of retained sensation or movement. In the patient who is suspected of having an injury to the cervical spinal cord we initially obtain a cross-table lateral cervical spine x-ray in the emergency room to confirm the presence or absence of a fracture or fracture dislocation. If there is a fracture dislocation, the patient is then further immobilized with skeletal traction.

One must also be concerned with whether the fracture or fracture dislocation is stable or unstable. One of the criteria for doing this that has been developed by our orthopaedic colleagues is the amount of translation that has occurred. It has been found that if the amount of translation of one vertebral body on another is greater than 3.5 mm on standard tube to film distance that patient may very well have an unstable fracture. In the same way, if the angle of rotation between corresponding vertebrae exceeds 11 degrees, that may also indicate an unstable situation.

It has been our experience that x-rays of the cervical spine obtained in the emergency room are quite inadequate for detailed evaluation of skeletal injuries. Our approach, particularly in the patient with the cervical injury is that even if a fracture dislocation can be reduced, laminography of the spine will be obtained. This has been especially helpful in identifying a unilateral locked facet.

If within an hours' time, we are able to reduce the patient's fracture—dislocation and restore the AP diameter of the cervical spine canal to at least two-thirds its normal dimension and yet the patient has shown no indication of neurologic recovery on sequential neurologic examination, we will then proceed with myelography. During this examination the patient remains in the supine position. The contrast medium is introduced into the subarachnoid space through the needle placed laterally between the first and second cervical vertebrae. A fish-mouth appearance has been interpreted as swelling within the spinal cord indicating intrinsic damage to the spinal cord with swelling and narrowing of the ventral subarachnoid space. Where the subarachnoid space has a normal diameter it has been felt that this is consistent with a vascular injury rather than extrinsic or intrinsic damage to the spinal cord. A localized defect in the subarachnoid space, in contrast, is regarded as representing either displaced bone or disc material.

If the patient has evidence of retained sensation and movement below the level of injury and if we have been unable to reduce his fracture dislocation in the cervical area or in the thoracic or thoracolumbar area and there is significant bony compression of the spinal canal, an operation will be considered. Depending on which portion of the spine and spinal cord appears to be maximally injured, we may approach the spinal cord either anteriorly or posteriorly, and then this is frequently followed by an internal stabilization procedure. In the thoracolumbar area, since many of these fractures produce ventral compression of the spinal cord, we have adopted a posterior lateral approach. The posterior aspect of the spine that is maximally involved is exposed, and then utilizing the high speed air drill, the facet on the side that is maximally involved is excised and the pedicle is burred down. This then allows us access to the anterior aspect of the spinal canal. Once bone or disc material is removed from the anterior aspect of the spinal canal, a stabilization procedure is performed.

We have attempted in the last 50 patients who we have treated consecutively here at the Yale-New Haven Medical Center to analyze this particular approach which I have discussed with you. Of those 50 patients with cervical spinal cord injuries, we have had available to us a total of 38 at one year post injury. In this particular group of patients it appears that there is a relationship between their neurological recovery and our ability to restore the AP diameter of the spinal canal. It is of interest to us that those patients in whom we had to resort to surgery to do this fared as well as those in whom we had been able to achieve a restoration of the normal diameter by closed means. Of potential interest, although the numbers are extremely small, are those patients whom we were able to treat within eight hours of their injury. These fared better than the patients we treated at 24 to 48 hours after injury.

We have also explored, in cooperation with five other spinal cord injury centers, both here in the Continental United States and Puerto Rico, the effect of corticosteroids in acute spinal cord trauma. Methylprednisolone is being administered in a dose of 100 mg/day or a dose of 1000 mg/day to see what effect it might have on altering the intrinsic damage and swelling that occurs within the spinal cord.

The tests that I have talked about so far provide us with rather complete information about the spine and the spinal cord injury. Yet, this information is still indirect. We think the CT scanner has the potential for providing direct information. With its use it is likely that it will be possible, for example, to distinquish between spinal cord edema and hematomyelia.

In summary, I think at this particular point we have a fairly good handle on what continuing damage may be occurring to the spinal cord as the result of extrinsic compression. I think it is important to remember that 50% of our patients have no evidence of sensation or movement below the level of injury, and it is in this group of patients that it is likely that there has been intrinsic damage to the spinal cord so that the emphasis in our laboratory has been to attempt to identify factors that may be modifiable within the substance of the spinal cord. This remains the continuing challenge in a

Center such as ours. Dr. Chehrazi now will briefly go over how we are beginning to analyze some of our clinical data that is accruing as a result of this experience with 306 patients.

**Dr. Chehrazi**

Over the past 50 years with increasing awareness of the complications of spinal cord injury and increasing ability to treat these complications, the mortality rate of patients with spinal cord injury has fallen from almost 100% to less than 20%. As a result there are increasing numbers of patients who survive their injuries with devastating neurological deficits. The question of how one can treat these patients to improve their neurological recovery has not been settled. Reviewing the literature is apt to leave one with the conclusion that no treatment is better than any other. In part, the problem has been due to lack of an adequate and a commonly accepted method for classifying the injury and standardizing the effect of treatment. With this in mind, we set out to provide a method for classification of spinal cord injury and recovery that accurately reflects the neurological deficit, is reproducible from Center to Center, and will easily submit to statistical analysis. Such a method should be applicable to prospective and retrospective studies as well.

Our method is based on identifying the segmental level of injury and measuring some clearly defined motor and sensory functions below this level. The responses are graded numerically. The average of these scores indicates the patient's neurological status. Patients are examined within 24 hours of their injury and are subsequently re-examined at follow-up in one year. The change in their scores reflects the change in their neurological status during the period of follow-up. The level of spinal cord injury is defined as the lowest spinal cord segment with intact motor and sensory function. This level is determined when the patient is seen in the emergency room and it is maintained throughout the course of follow-up. The score is determined by grading the strengths of up to 10 pairs of muscles and intactness to pin sensation, proprioception and deep pain sensibility below the level of lesion.

The muscles were selected for the ease and accuracy with which they can be examined, the spectrum of the segments of the spinal cord that they represent, and finally their significance for recovery of functional tasks. The motor score is determined by measuring the strength of these muscles located below the level of injury on a scale of 0 to 5 and then averaging the result. The sensory score is the sum of the averaged values for each of the three modalities tested. The pinprick test, with 0 indicating absent, 1 indicating decreased or abnormal and 2 indicating normal, is measured in dermatomes distal to the level of the injury and averaged for pinprick value. The position sense is examined in the little fingers and in the big toes. When the level of injury is thoracic or below only the toes are examined. The values are averaged again between 0 and 2. The deep pain is examined by toe compression, and if the patient localizes it to the correct side he gets a score of 1, otherwise he gets a score of zero. Motor and sensory scores are added to obtain the Yale Scale score. The same examination is performed at follow-up.

In order to be able to directly assess the change in neurological function, the Yale Scale score at one year is plotted against the Yale Scale score on admission. The line of least square drawn on this data can then be used to compare the outcome with any other group of patients examined similarly at one year. In order to assess the rate of recovery, as the rate of return of function, a recovery rate was constructed. The recovery rate is the ratio of the actual change to the optimum potential change for each patient within a specified period of time. This can be calculated by subtracting the admission score from the follow-up score and dividing it by the difference of 10, the intact score, minus the admission score. This ratio presented as a percentage will provide a measure of recovery of the deficit which is very sensitive and specific for any change in the deficit. The data presented here are based on the initial application of the Yale Scale to 37 consecutive patients who were treated at the Yale-New Haven Hospital within 24 hours of their trauma. All patients were rated on admission and at follow-up in one year. The data obtained were analyzed according to a model with two variables—one the lesion as "complete" or "incomplete," and the other the admission score. The model may be written as an equation: $Y = B_0 + B_1 + B_2 + B_3XL + E$. In this statistical model, X is the admission score and Y is the follow-up score, L is given a value of one for complete lesions and a value of zero for incomplete lesions. E is an unobservable error term. The $B_1$'s are estimated by the model from the data, in other words, if $B_3$ equals zero it will indicate that X will not predict the outcome of Y depending on the status of L; and if $B_2$ is zero it would indicate that the admission score has no predictive value for the outcome. Submitting our data to such a model for statistical analysis, the lesion parameter $B_1$ was found to be highly significant ($p < 0.0001$). So was $B_2$ the admission score ($p < 0.001$). Using this model we were able to derive the following formula for our patients, based on their Yale Scale score on admission and the lesion type. $YSS_1 = 7.67 - 6.31 (L) + 0.24 (YSS_0)$. This equation correctly accounted for 93% of the variation of the outcome at one year.

The same analysis was done for the recovery rate. It was noted that the parameter for lesion type $B_1$ was highly significant, ($p < 0.001$), however, the admission score was not a significant determinant of the outcome at one year ($p < 0.1905$). A recovery rate equation of $\%RR - 70.21 - 64.40 (L) + 1.61 (YSS_0)$ was obtained.

As noted above, the value of $B_2 = 1.61$ is not statistically significant. Therefore, by dropping the $B_2$ term, one can say that in our treatment regimen the percent recovery rate was only dependent on the type of injury and that the patients with "partial" injury had 70% of their deficit recovered by one years' time, while patients with complete injury demonstrated less than 6% recovery of their deficits.

The results are interesting in that one can compare effectively results of varying treatments regardless of the admitting status of the patients. Furthermore, the fact that the recovery rate turns out to be independent of the severity of injury in patients with partial injury may indicate that these patients have the same potential for recovery regardless of the severity of the deficit; in other words, their potential for recovery of the deficit is the same. We have developed a very descriptive and predictive model of spinal cord injury and recovery. Groups of patients treated by varying treatment modalities can be compared with each other and the effectiveness of the treatment modality can be compared, possibly by only looking at the recovery rate. Dr. Stewart will follow with the work that has been ongoing in the laboratory here, to supplement our clinical investigations.

### Dr. Stewart

From an experimental point of view our work has tried to approach one of the dominating issues in spinal cord trauma research and clinical practice, the question of primary versus secondary injury. Put briefly, for primary injury the hypothesis is that at the time of impact or compression of the cord that fibers are broken, the long axon pathways are disrupted and therefore, that the extent of injury and the possibilities for recovery are fixed at the time of injury. This is a rather pessimistic view and leads one in the direction of examining the possibilities for regeneration, rather than thinking about therapeutic procedures. The secondary injury hypothesis is that the degree of injury and the extent of recovery is not determined at the moment of trauma but that the trauma itself sets up a series of secondary events which include vascular, edematous and biochemical changes and that these changes over the course of time are responsible for the axonal loss. Of course, clinically this is a more attractive hypothesis because if one could identify these secondary events and if these secondary events occurred with a long enough time course, one could intervene therapeutically and reverse the process. In our laboratories we have looked at several aspects of this secondary process. We have examined blood flow. This work has been begun several years ago by Dr. Howard Senter and has been continued ably by Drs. Lohse, Piepmeier and Bucholz. They have used the hydrogen clearance method which takes advantage of the possibility of recording, with an electrode, the concentration of freely diffusible gas. The determinations of blood flow are based upon the rate at which inspired hydrogen gas is cleared from the tissue. The blood flow is measured in the lateral white matter at the site of injury and one segment below. Following severe impact trauma to the exposed spinal cord, they have been shown that for an hour or so following this interval the flow falls to very low levels, in some cases only 25% of the control. This was an important finding because up until this work was done, there was considerable disagreement in the literature as to whether blood flow in white matter after severe injury was either increased or decreased. We have concluded that after severe trauma, autoregulation is abolished. If the blood pressure falls, as it normally does, there will be a decrease in blood flow but if blood pressure is maintained at or near normal levels, there will be normal or near normal blood flow. We have also used a high resolution antipyrine method which affords one the possibility of determining blood flow in a large number of regions of gray and white matter.

These studies reinforce a general principle about the relative sensitivity of gray and white matter to impact injury. Immediately after injury the white matter flow may still be within the normal ranges, while the gray matter flow is considerably depressed. This finding agrees with well established work that the gray matter is considerably more sensitive to impact and indicates that gray matter flow responds much more quickly to injury than white matter. At four hours after injury, we have found that both gray and white matter flow is decreased.

We have also looked with Dr. Wagner at blood-brain barrier disruption following spinal cord trauma. We have used fluorescein-labelled, albumin, a compound which remains within the vascular system in regions of normal blood-brain barrier integrity but leaks out at sites of injury, to examine blood-brain defects. At the site of impact in the thoracic cord there is considerable extravasation of fluorescein-labelled albumin in the gray matter, but that as one goes rostral and caudal to the site of injury, there is a considerable amount of label which travels primarily in the white matter. These findings reinforce the concept of an immediate central event in the gray matter followed by a sequential centrifugal and longitudinal involvement of white matter.

We have started a new line of investigation with the help of Dr. Stanislav Nemecek from Charles University in Prague, Czechoslovakia. He has been with us for three months, and during this time we have focused on the status of blood vessel patency in the contused cord. His method involves systemic injection on india ink or carbon black and examining the pattern of blood vessel filling following injury. At four hours after injury, one can obtain a complete picture of spinal cord angioarchitecture with filling of the small vessels at the periphery of the impact zone, but as one goes centrally, one sees only vessels filled and finally, complete hemorrhagic obstruction in the central part of the cord.

If one examines with the same method an animal at three weeks after injury, there is no filling in the central portion of the cord and peripherally there are only vessels filled, and only on the extreme periphery is near normal angioarchitecture preserved. Centrally, the area with only large vessel filling has undergone complete loss of fibers.

The question of primary damage has been considerably more difficult to approach. As any one who has done any light or electron microscopy knows, good tissue preservation of traumatized tissue is a serious problem. We have tried to approach this problem with electron microscopic techniques but to date that approach has not yielded good results. We have had some success, Dr. Carole LaMotte in our laboratories has been looking at the uptake of tracer substances by injured axons. This work is based on the assumption that injured axon may become permeable to tracer substances before it starts Wallerian degeneration.

The prospects for regeneration of spinal cord pathways are also being examined in collaboration with Dr. Melvin Cohen in the Department of Biology. He has been working for some years on the Lamprey brain and spinal cord. If one cuts the spinal cord of the larval Lamprey, in several months the Lamprey will start swimming again. Dr. Cohen has recently demonstrated anatomically that the fibers will cross the cut region and re-establish normal synapses in the distal cord. The Lamprey will now serve as a model for examining factors which may accelerate regrowth. He has had some success with the use of very small electrical current stimulation.

# Progress in Burn Management: Retrospective Look

MICHAEL L. D'AIUTO, M.D.

Until about 25 years ago, there was little hope for severely burned victims; burns of over 50% body surface area (BSA) were associated with a very high mortality, and survivors were frequently left with devastating residual deformity, both physical and emotional. It was the evolution of a clearer concept of the immediate crystalloid and colloid needs to maintain adequate tissue perfusion coupled with the development of effective topical therapy that began to turn the tide in the middle '60s. Also, while hardly exhaustive, progress in other areas during this period has resulted not only in decreased morbidity, mortality and deformity, but also in maximizing rehabilitation, both functionally and emotionally. Further, the availability of physiological monitoring of functions, previously only indirectly available, has become commonplace, further refining the critical early management of resuscitation.

As these developments were taking place, the burn service and ultimately the burn unit of Bridgeport Hospital came into existence. It started as a group of five general surgeons and one plastic surgeon, growing from the manifest interest and experience in burn management, derived chiefly from the Vietnam conflict. From the years 1970 to 1972, as expertise grew, and as hardware necessary for burn management was acquired, ideas were exchanged, and although at first unwritten never-the-less definite programs of management evolved reflecting the experience of the team and the rapidly growing literature on burn management. During this time, burn awareness was also rising nationally, as was trauma, termed "the silent epidemic". Finally, an interested and highly supportive hospital administration addressing the fact that the vast majority of the more than 100,000 burn cases treated annually were cared for in community hospitals, gave us one part of a surgical floor, representing some 15 beds ideally sequestered from the rest of the hospital, to develop a burn care facility. Through generous community support, a Hubbard Tank was installed on the floor, and the burn unit came into being and was dedicated in the Fall of 1973. Continued improvements and additional specialized equipment has been added yearly. The amplification of the professional staff, not only in

---

MICHAEL L. D'AIUTO, M.D., Director, Burn Unit, Bridgeport Hospital, Bridgeport, CT.

numbers but also in expertise, associated with the in-hospital as well as pre-hospital training of nursing staffs, physical therapists and occupational therapists, combined with interested and capable social workers, psychiatrists and other professionals, resulted in a unit which at the present maintains a standard of excellence second to none. The most recent additions to the unit's services include a regular out-patient burn clinic to allow multidisciplinary follow-up to maximize rehabilitation, as well as the formation of a burns recovered organization, which meets on a monthly basis for group encounter and support, and has enjoyed immediate success.

While reviewing our 1980 experience of 151 admissions, (which includes 130 acute cases and 21 reconstructive admission) we could not help but compare not just numbers, but to assess the whole picture of management in the earlier years as well, with a few observations we feel are interesting and worthy of sharing, to demonstrate the progress made in just eight years of our existence. With this in mind, let us look at some of the major aspects of burn management available through 1973, in contrast with the knowledge and techniques of today.

### Resuscitation

While the Parkland (Baxter) Formula was just becoming the standard of crystalloid resuscitation, the place of colloids was still unclear in many quarters; the use of salt-poor albumin or other colloid solutions in the first hours of resuscitation suggested by various other formula (Brooke, Moore, Evans) was still being debated.

Today, while there are a few who hold to "no formula", most use that of Baxter (kg body weight x %BSA x 4 in 24 hours) as a starting point, adjusting the fluid rate to a urinary output of 30 ml/hr rather than 50 ml/hr, to reduce water loading as much as possible, and following cardiac output and left atrial filling pressures in critical patients.

Keeping in mind that altered capillary permeability, the basic problem of burn injury, is not restored until 18-24 hours post-burn, colloid is deferred by most at least 12 hours or more, to allow reconstitution of capillary permeability, at least in part. While some advocate immediate use of rewarmed fresh frozen plasma, since it takes a few hours to thaw, it hardly becomes immediate, but rather is started 6-8 hours post-burn.

Colloid used today is preferably fresh frozen plasma, which when carefully warmed is not denatured as is either rapidly rewarmed fresh frozen plasma or salt-poor albumin and is not thought to target on the pulmonary alveolar membrane, thereby aggrevating a pulmonary inhalational injury.

While in the past few years there have been reports of experience using very hypertonic resuscitation to reduce the water load obligated by the more traditional formula, there are hazards involved in this mode of resuscitation such that it is not commonly used. The use of buffered lactated Ringers solution, that is lactated Ringers containing varying extra quantities of sodium lactate, is used in many units, but this does not appear to represent any fundamental departure or significant advantage. Some day, with further understanding of the nature of the lesion of altered capillary permeability and a specific remedy to reverse this alteration, a review such as this might be able to set aside current modes of resuscitation which, however successful they may be, impose a significant degree of physiologic stress by virture of the large and often imprecise volumes necessary to insure survival and perfusion.

### Topicals

In the late sixties the only satisfactory and dependable topical agents available were ½% silver nitrate solution used as a continuous wet soak over a bulky coarse meshed gauze dressing, and mefanide acetate (sulfamylon®) applied to the burn or "buttered on" open. Other topical antibacterials including nitrofurazone, bacitracin, and neosporin solutions were found not to be suitable for large BSA burns because of absorption. The inherent toxicity associated with neosporin made this agent particularly hazardous to use; this was unfortunate because of its good anti-bacterial spectrum. Despite the inconvenience of ½% silver nitrate as a topical agent, with its straining properties and inherent difficulties in application as a continuous wet dressing changed at least every 8 to 12 hours, this agent, still is a fine, relatively innocuous modality. One must be aware of the possibility of water translocation during the application of hypotonic soaks and tanking, as well as anticipate a drop in serum chloride, sodium and occasionally serum potassium levels, secondary to leeching. However, with careful management and electrolyte replacement this can be minimized.

Mefanide acetate was used to a greater extent in the early years of the unit because of its high degree of eschar penetration, as well as good bactericidal action. The carbonic anhydrase inhibition by this agent, resulting in metabolic acidosis, along with the severe unrelenting pain responding poorly to medication and associated with its application to second or mixed degree burn areas, is known to all who use it, particularly the patients. Today, because of more aggressive and early escharectomy, coupled with the advent of other topical agents lacking the metabolic consequences of mefanide, this agent is used only for special indications. It is, however, an agent not to be totally discarded.

In the latter part of 1973, silver sulfadiazine, which had been developed in Europe, finally was made available in this country, and from then through the present time has proved to be an extremely effective agent. It is used in open fashion as a cream, although it can be used with a light dressing, is water soluble, is not inherently painful on application, has a good spectrum of coverage, and is not associated with any metabolic consequences. This agent is probably one of the most commonly used topicals in treating major burns, not only in this country, but throughout the world. Attempts have been made to improve silver sulfadiazine by adding a cerium nitrate salt. While preliminary reports of this combined agent were quite encouraging, the latest opinions are that the combined drug is probably no better than either of the agents used alone (cerium nitrate is a topical solution which resembles silver nitrate quite closely).

At the same time that silver sulfadiazine was introduced in this country, povodone iodine (which had been used for a number of years as a disinfectant not only in the hospital but also by NASA to disinfect Apollo Capsules returning from the moon) began use as a topical agent, at first as a solution, but soon was converted to either a foam or to povodone-impregnated batiste gauze. This agent is quite effective against gram positive, gram negative, yeast, and viral organisms has a good degree of eschar penetration, and has no serious metabolic consequences. A moderate degree of pain is associated with povodone that can be significant enough to warrant discontinuation in some cases; however, it does not begin to approach that associated with mefanide acetate.

It is clear that the addition of the above topicals to the short list existing as our unit was starting now make it possible to reach "on the shelf" to select another agent whenever there is a problem, including the emergence of resistant organisms. This was a consolation devoutly to be wished in the early '70s, and while enjoyed at the present time, the hope for the development of additional topical agents is one shared not only by burn surgeons, but by drug companies as well!

Topical enzymes of several varieties were used in the early '70s with varying effect; it can be said today that there is a topical enzyme (Travase®) that has enjoyed relative success when combined with a topical agent such as silver sulfadiazine, in efforts to rapidly lyse eschar in strategic and dynamic areas where tendons, arteries and nerves immediately subtend and where sharp debridement might prove hazardous. Obviously the use is a limited one, although it enjoys moderate popularity when specifically indicated.

## Biological Dressings

Pigskin emerged in the late '60s as a rather popular zenograft. The rationale for this agent is to seal the burned area, thereby lessening translocation of water, electrolytes, and protein, and also lessening pain. There is no antibacterial action associated with pigskin, and it was found that concommitant topical therapy was necessary to prevent sepsis. Meshed pigskin became available through which topical agents could permeate, providing a combination of the pigskin itself and the topical. Today, this modality is used less frequently though it is still used in conjunction with meshed autograft.

Cadaver skin as a biological dressing is increasingly available. The use of cadaver skin as a temporary homograft is not fundamentally for pain control or for biological isolation as it were; it is ideally used in those situations where the percent of BSA is so great as to leave little donor site for autografting, except in repeated stages. In these instances, cadaver skin along with a modified immunosupression regimen has been used quite successfully in keeping such patients closed long enough to allow the homograft to be replaced by strips of autograft as donor sites become available. As the details and technicalities of cadaver skin retrieval are worked out, and availability increased, we anticipate increasing use of this treatment adjunct pending the development of artificial skin.

Totally synthetic biological dressings began to evolve in the middle '70s; however, they have not been developed sufficiently to warrant wide usage. A few such agents currently under development seem quite promising; but, further clinical investigations are necessary and will be forthcoming within the next year or so.

In the early '70s, most autografts were applied as a whole sheet graft with ventilating holes placed as necessary to allow drainage when anticipated. From the middle '70s to the present time, the concept of mesh grafting, utilizing apparatus such as the Tanner Mesher has virtually replaced sheet grafting except as indicated for cosmetic purposes. This technique allows an expansion of from 1:1½ to 1:9 donor to recipient site to be covered, thereby markedly increasing our ability to cover large BSA and saving donor sites.

The current move to earlier grafting implies a much more aggressive attitude towards early tangential excision with or without immediate autografting. It is this aggressive and successful attitude that has gone far to shorten hospital stay, decrease morbidity, and turn out a better patient in general; also, this philosophy makes eschar penetration as a characteristic of topical agents far less important these days, since the eschar is not around very long for penetration to be required!

## Sepsis

The frustration of sepsis in burn management continues to the present. The experience bitterly learned in the early years of antibiotics and proven in repeated trials is that so called "prophylactic antibiotics" do not prevent sepsis. The advent of a multitude of potent antibiotics has certainly increased the armamentarium in burn management; however, prompt resuscitation, eschar excision, meticulous care of the granulating bed, and skin grafting are the means by which sepsis can best be prevented. When sepsis does occur, treatment by antibiotics is dictated by the organism and its sensitivity.

It should be mentioned that although antibiotics are almost routinely employed in the perioperative period to prevent streptococcal colonization with loss of the graft and minimize the dangers of bacteremia, this regimen should not be confused with an attempt to prevent sepsis in a classical sense.

### Nutrition

In burn management, more than any other severely stressful state requiring intake of "sufficient calories", the evidence clearly is that without the utilization of central, peripheral, or enteral hyperalimentation as a source of adequate nutrition, the severely burned who now survives the initial resuscitation will fail in his later hospital course. The availability of elemental diets, hyperalimentation formulas with free amino acids, and a more thorough understanding of the nutritional and metabolic principles involved in maintaining positive nitrogen balance has made it possible for severely burned victims not only to stop losing weight, but actually to gain weight through the latter part of hospitalization! This goal, only a dream some nine years ago, today is a reality.

### Pulmonary Inhalational Injury

Such injuries, commonly associated with closed-space burns, are not truly burns, but rather a pulmonary alveolar membrane injury with associated obliterating bronchiolitis caused by exposure to noxious products of combustion. As one might imagine, the numbers and types of toxic agents produced are virtually infinite. The fundamental problem in these cases is either a decreased ability to exchange at the alveolar level, or to move air because of increased airway resistance. Antibiotics as primary treatment were used commonly in the early '70s; today, they are used for established problems such as pneumonia, positive gram stain and culture, etc., and particularly in patients with pre-existing lung disease.

Today, heightened anticipation of pulmonary injury combined with more sophisticated respiratory support, while markedly improving the salvage rate, awaits a specific solution. Steroids, while supportive, have not regularly been found to be helpful.

### Public Awareness

A Federal investigation, begun in the '60s, to look into the mounting toll from burns and trauma, characterized this as "the silent epidemic". The public is increasingly aware of the problem. Ten years ago, when speaking about burns and our burn unit to interested groups, we were received with surprised expressions and the frequent statement that "We never realized how big the problem is!" The public has since become conscious of the 2 million burns yearly with 100,000 hospitalized for major treatment, inestimable personal loss, and property loss exceeding 14 billion dollars, and is beginning to make its voice heard. This has resulted in legislation mandating regulations of flame-proof sleepwear in children. The textile industry, reacting to this pressure, has developed first a controversial flame-retardant treatment of clothing and more recently is engineering fabrics that are inherently flame retardant.

The firefighters are to be praised for their role, not just in fighting fires and saving victims, which in itself constitutes heroism to its fullest extent, but also in mounting educational campaigns. This effort has been directed not only to adults but particularly to the grammar school where conditioning can prove to be of great value. The assistance of show business people, utilizing the media for mass education of youngsters through the simple chant of "Stop, Drop and Roll" in response to a clothing fire is another example of citizen involvement.

Campaigns for the installation of smoke detectors have undoubtedly saved many lives and certainly reduced property damage. The decreasing cost of this early warning device has brought it within the reach of most citizens.

The degree of awareness in many communities has resulted in the formation of support groups for burn care. The Shriners support not only their three major hospitals in Boston, Galveston, and Cincinnati for the active treatment of burn victims, but also immense research programs. In Southern Connecticut, the CT Burns Foundation is made up of interested citizens from various walks of life who have been touched in some way by exposure to the burn problem, and who as a group and individually are actively furthering burn care prevention and awareness.

In the final analysis, the long-term solution for this problem is prevention, and we as physicians must continue to devote our efforts not only to treatment but to this important aspect of the "silent epidemic".

# CT Diagnosis of Infected Prosthetic Graft Sites

PETER A. TRIOLO, M.D. AND ROBERT D. RUSSO, JR., M.D.

**ABSTRACT—Occult infections in previously placed aortic synthetic grafts are a well known entity in the work-up of patients with fevers of unknown origin. We now offer an additional modality which is more readily available to help in emergency cases where time is of the essence and delayed nuclear scans can not be performed. This case report of a CT finding of air within the graft site is added to previous cases to help in these emergency situations.**

With the arrival of CT (computed tomography) as a unique, non-invasive diagnostic tool, early detection of previously occult high risk post-surgical complications is becoming more commonplace. A recent series by Haaga, et. al.,[1] reports a distinctive diagnostic finding which supports the diagnosis of infected synthetic grafts. We now offer an additional case in which CT has successfully detected an infected aortic graft site with concurrent supportive data supplied by Gallium scan.

The radiolographic findings of multiple pockets of gas at the suspected locus of infection has evolved as the basis of diagnoses by CT. The case we present in this paper will further substantiate the clinical and diagnostic significance of this finding.

## Case Report

A 71 year old white male was admitted to St. Vincent's Medical Center with a chief complaint of left leg pain, fever and chills of 10 days duration. The patient had undergone aorto-femoral and left iliac bypass in September, 1977. He had a white count of 27,000 with a left shift and was subsequently started on antibiotics.[2] Stools were negative for occult blood.

Chest and abdominal x-rays were normal. Echocardiogram was also within normal limits with no evidence of bacterial endocarditis demonstrated.

Galium scan (Figure 1) showed a persistent midline activity over the lower lumbar spine on two consecutive day studies which was determined to be suspicious of graft infection. This finding correlated well geographically with the data provided by CT.

CT showed definitive evidence of air within the graft site and in the peri-aortic tissues (Figures 2, 3), which is highly suggestive of the presence of gas-forming organisms and/or enteric fistula. The remainder of the scan was unremarkable.

Aorto-femeral arteriogram demonstrated contraction of the two branches of the aorto-femoral graft (Figure 4). This finding is also suggestive of infection.

The surgical pathology report indicated that there was active infection of the mural thrombus by gram variable bacteria. An additional finding at surgery was the presence of a duodenal fistula which had eroded into the aortic graft.[3] The infected portion of the graft was removed and the repair procedure completed. The patient was kept on antibiotics and his clinical course improved post-surgically.[2]

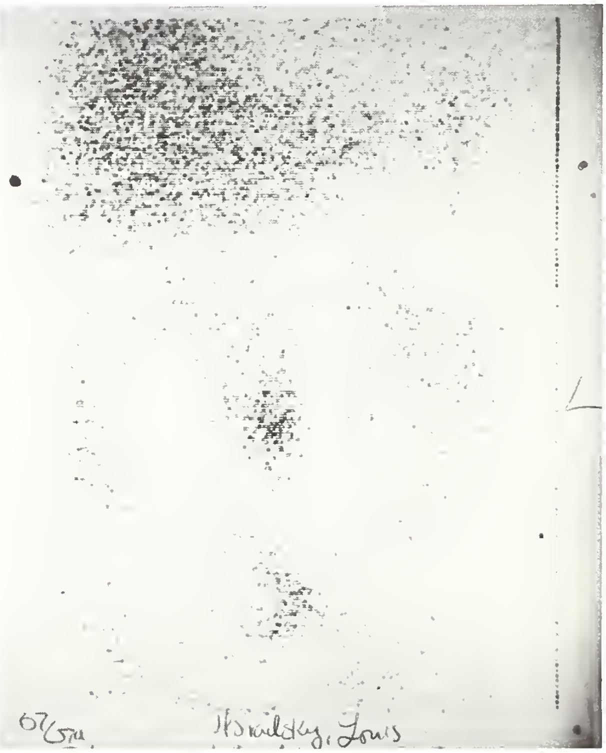


Figure 1
Gallium scan showing increased uptake over the midline coinciding geographically with the infected graft site.

---

PETER A. TRIOLO, M.D., Radiology Resident; ROBERT D. RUSSO, JR., M.D., Director of CT Scanning; both of St. Vincent's Medical Center, Bridgeport, CT.

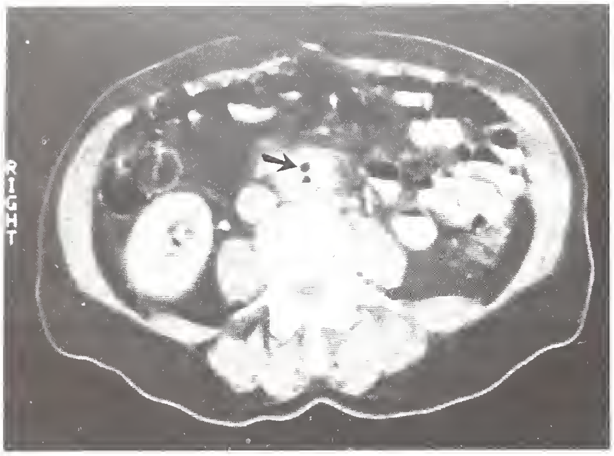


Figure 2
Scans displaying small multiple pockets of gas (arrow) at the infected areas of the graft.

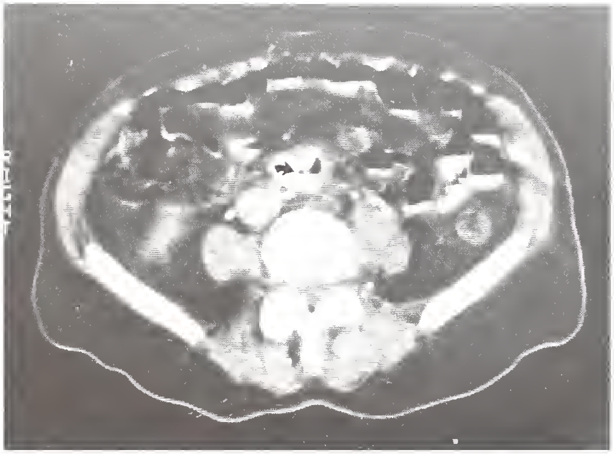


Figure 3
Scans displaying small multiple pockets of gas (arrow) at the infected areas of the graft.

## Discussion

The CT findings presented in this case appear to correlate well with Haaga in his series of four cases of infected grafts. The definitive findings being the presence of multiple gas pockets in and around the infected site which suggest that a process of fermentation (a physiologic phenomenon of gram negative bacteria) was the etiologic event responsible for the finding.

Our results are well supported by pathological demonstration of the gram negative organisms within the specimen obtained at surgery. The Gallium scan findings of increased uptake over the lower lumbar spine support the CT evidence of an infective process at the graft site.

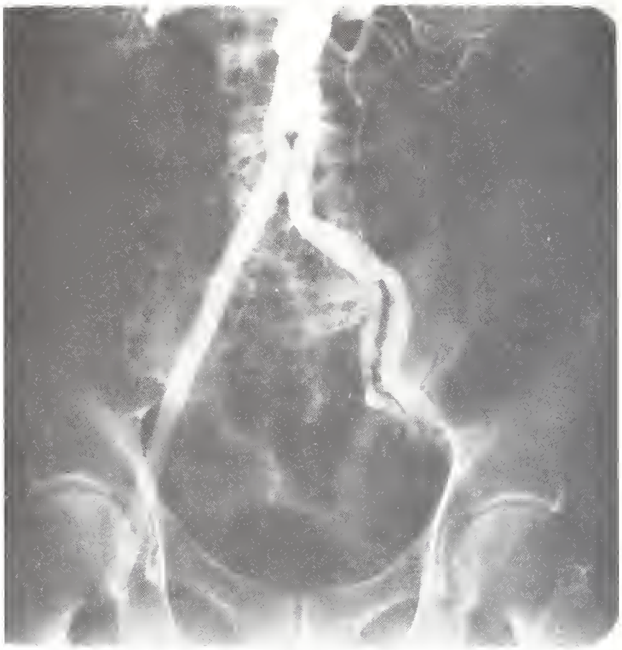


Figure 4
Aorto-femoral arteriogram showing contraction of the two branches of the aorto-femoral graft.

We agree that proper therapy should not be delayed in light of the diagnostic findings offered by CT. The high morbidity and mortality of this complication can make therapeutic delay a most unfortunate error.[4] The encouraging results with CT should serve as a useful diagnostic aid to both the clinician and surgeon in salvaging many potentially fatal cases of infected grafts.

Therefore, in the investigation of infected aortic grafts we recommend the non-invasive, low-risk, CT and Gallium scans to make the diagnosis. Arteriography is used pre-operatively as needed.

### REFERENCES

1. Haaga Jr, Baldwin GN, et al, CT Detection of Infected Synthetic Grafts: Preliminary Report of a New Sign. American Journal of Roentgenology 131: 317, August 1978
2. Shaw RS, and Bave AE: Management of Sepsis Complicating Arterial Reconstructive Surgery. Surgery 53:75, 1963
3. Donovan TJ, and Bucknam CA: Aorto-Enteric Fistula. Archives of Surgery 95:810, 1967
4. Szkagyi DE, Smith RF: Infection of Arterial Reconstruction With Synthetic Grafts. Annals of Surgery 176:321-333, 1972

# Important Advances in Clinical Medicine

## Epitomes of Progress—Obstetrics and Gynecology

### The Prolactinoma Problem: Long-Term Issues and Short-Term Answers

A recent autopsy survey suggests that 10 percent of the population in the United States have prolactinomas. If true, prolactinomas have become the most frequent endocrine disorder, more common even than diabetes, yet little is known of their natural history. It is clear, however, that among a selected population of women with amenorrhea and infertility, as many as a third have hyperprolactinemia and, of these, a third have prolactinomas. Moreover, if galactorrhea is also present, hyperprolactinemia occurs in 75 percent of these patients, and the certainty of a tumor is doubled. Further, early diagnosis is very important because the duration of amenorrhea, for example, appears inversely related to therapeutic success. Because almost 65 percent of women with prolactinomas have a history of sustained exposure to estrogen (in pregnancy or from use of oral contraceptives), menstrual disorders in these women indicate the need for prompt screening for hyperprolactinemia.

Three forms of therapy are available to patients with prolactinomas. Pituitary irradiation, either by conventional radiation therapy or with alpha particles, has been discouraging thus far; only a few patients have had remission of symptoms and in most, serum prolactin (PRL) levels remain elevated as long as three years after treatment.

Bromocriptine mesylate (Parlodel), a dopamine receptor agonist, suppresses excessive secretion of PRL within several weeks in more than 85 percent of cases, although side effects limit prolonged use in 10 percent to 20 percent of patients. Nonetheless, this drug restores both menses and fertility and arrests galactorrhea with the same success rate as surgical procedures. The long-term effects on tumor growth remain unclear—some tumors have shown radiologic regression, whereas others, particularly those found in pregnant women, have increased in size. More important, cessation of bromocriptine is followed by prompt recurrence of hyperprolactinemia in 85 percent of patients. Bromocriptine therefore is best reserved for symptomatic improvement of hyperprolactinemia in patients without radiologic evidence of tumor and in those for whom operations have been unsuccessful. When drug therapy is used as an alternative to operating to induce fertility, prolonged and perhaps lifetime surveillance may be needed to assess tumor growth.

Pituitary transsphenoidal microsurgery remains the preferred treatment for prolactinomas. Successful removal of microtumors with preservation of pituitary function is possible in up to 90 percent of cases. Restoration of menses and cessation of galactorrhea can be achieved in as many as 75 percent of patients, although PRL levels are restored to normal in only 50 percent of them. Finally, the minimal mortality and morbidity rates of this operation, when carried out by an experienced surgeon, indicate that it is the best treatment for prolactinomas available at present.

Ernest M. Gold MD

REFERENCES

Burrow GN, Wortzman G, Newcastle NB, et al: Microadenomas of the pituitary and abnormal sellar tomograms in an unselected autopsy series. N Engl J Med 304:156-158, Jan 15, 1981

Schlechte J, Sherman B, Halmi N, et al: Prolactin secreting pituitary tumors in amenorrheic women: A comprehensive study. Endocrine Reviews 1:293-308, 1980

Post KD, Biller BJ, Adelman LS, et al: Selective transsphenoidal adenomectomy in women with galactorrhea-amenorrhea. JAMA 242:158-162, Jul 13, 1979

Richmond IL, Newton TH, Wilson CB: Prolactin-secreting adenomas: Correlation of radiographic and surgical findings. Am J Radiol 134:707-710, 1980

Tolis G: Prolactin: Physiology and pathology. Hosp Pract, pp 85-95, Feb 1980

### Prenatal Diagnosis of Short-Limbed Dwarfism by Ultrasonography

Ultrasonography has greatly improved our ability to diagnose fetal malformations prenatally. Many anomalies of the fetal neural axis, bowel and kidneys have been described, and in the last two years considerable attention has been directed toward abnormalities of the fetal bony skeleton.

Ultrasonic diagnosis of short-limbed dwarfism is accomplished by measuring the length of the fetal femurs. The length of the femoral disphysis, readily measured with real-time ultrasonographic systems, is compared with the biparietal diameter as an "internal" control of fetal size variability. Normal values have been established for femur lengths from the end of the first trimester to early third trimester and 99 percent confidence limits have been set.

In patients at risk for having babies with short-limbed bone dysplasias, we begin femur measurements at approximately 18 to 20 weeks after the last menstrual period (LMP). If the initial measurement falls within the normal range, serial measurements should be obtained at two-week intervals until either the femur length falls into the abnormal range or the 28th week is reached and normalcy is established.

Thus far, successful diagnoses have been established in fetuses before 22 weeks of age (based on LMP) in the Ellis-van Creveld syndrome, diastrophic dwarfism, achondrogenesis and homozygous achondroplasia. In addition, an unclassified but severe dwarf syndrome has been accurately predicted before 22 weeks menstrual age. Three cases of heterozygous achondroplasia were diagnosed but the presence of short femurs was not confirmed until after 24 weeks menstrual age. In eight patients at risk for having babies with dwarf syndromes, fetuses were diagnosed as showing no abnormalities and, subsequently, the diagnoses proved correct.

The most interesting observation in this series to date, other than the dramatic accuracy in this small sample of patients, is the fact that limb growth in dwarfs occurs differently in heterozygous achondroplasia than in homozygous achondroplasia or other more severe forms of dwarfism. Not only does this fact enable one to separate homozygous from heterozygous achondroplasia by a simple and safe examination, but it establishes differences in bone growth that were not previously recognized.

Roy A. Filly, MD

REFERENCES

Mahoney MJ, Hobbins JC: Prenatal diagnosis of chondroectodermal dysplasia (Ellis-van Creveld syndrome) with fetoscopy and ultrasound. N Engl J Med 297:258-261, Aug 4, 1977

Filly RA, Golbus MS, Carey JC, et al: Short-limbed dwarfism: Ultrasonographic diagnosis by mensuration of fetal femoral length. Radiology, 1981 (In press)

Queenan JT, O'Brien GD, Campbell S: Ultrasound measurement of fetal limb bones. Am J Obstet Gynecol 138:297-302, Oct 1, 1980

## Intrauterine Growth Retardation

The diagnosis of intrauterine growth retardation (IUGR) is appropriate for any neonate whose birth weight is less than the tenth percentile for its gestational age. This aberration in growth may result from numerous causes, but the most common include maternal vascular disease, multiple gestations, chromosomal and other isolated malformations of the fetus and fetal viral infections.

Initially, the diagnosis is suspected when the uterine size is too small for the presumed gestational age of the fetus. Ultrasonographic evaluation confirms the diagnosis by showing a decreased rate of growth of the fetal biparietal diameter and a decrease in the total intrauterine volume associated with oligohydramnios. More recently, concomitant measurements of head-to-body circumference ratios have proved helpful in delineating IUGR.

When it has been determined that an aberration in growth exists during pregnancy, management includes counseling of parents, consultation with a neonatologist and tests to evaluate fetal well-being. The latter include electronic monitoring of the fetal heart rate responses to fetal movement and to uterine contractions. If these responses are normal and maternal vascular disease is absent, the patient may continue her pregnancy to term. Consideration of delivery before term may be an option when fetal lung maturity has been achieved. Because poor oxygenation often results in birth asphyxia in these infants during labor, fetal heart rate monitoring is indicated; a cesarean section should be seriously considered.

A neonate with IUGR has a constellation of problems which may include birth asphyxia with its associated complications of meconium aspiration pneumonitis and central nervous system depression as well as hypoglycemia, hypocalcemia, temperature instability and polycythemia. Problems related to congenital malformations and infections also occur. Close observation to prevent birth asphyxia in the prepartum and intrapartum periods and intensive neonatal supportive care result in the best long-term outcome.

Robert Resnik, MD

REFERENCES

Battaglia FC: Intrauterine growth retardation: An invitational symposium. J Reprod Med 21:283-286, Nov 1978

Jones MD Jr, Battaglia FC: Intrauterine growth retardation. Am J Obstet Gynecol 127:540-549, Mar 1, 1977

Levine SC, Filly RA, Creasy RK: Identification of fetal growth retardation by ultrasonographic estimation of total intrauterine volume. JCU 7:21-26, Feb 1979

## Recent Advances in Prenatal Diagnosis of Genetic Defects

A significant advance in medical genetics is the ability to make an in utero diagnosis of genetic defects. The study of amniotic fluid constituents allows the diagnosis of all chromosomal and many metabolic abnormalities. However, some disorders are not manifested by changes in amniotic fluid constituents. The development of fetoscopy and the ability to obtain fetal blood specimens makes possible prenatal diagnosis of diseases not possible by amniocentesis—among these are the hemoglobinopathies.

Since the first reports of the prenatal diagnosis of a hemoglobinopathy over 700 pragnancies have been monitored. Both structural abnormalities (such as sickle cell) and abnormalities of synthesis rates of globin chains can be diagnosed in utero. The risk of fetal death and spontaneous abortion from fetoscopy and fetal blood sampling is approximately 4 percent to 5 percent when done by an experienced physician.

Some cases of sickle cell anemia can be diagnosed in utero using only amniocentesis. These techniques involve use of restriction endonucleases, enzymes which cleave DNA within specific base-sequence recognition sites. There is an endonuclease-defined DNA mutation on the same chromosome as (but not part of or related to) the sickle mutation in 50 percent to 60 percent of American blacks carrying the sickle mutation. Therefore, in this proportion of the families at risk, a prenatal diagnosis can be accomplished with amniotic fluid cells (which contain DNA) instead of fetoscopic blood sampling.

Mitchell S. Golbus, MD

REFERENCES

Kan YW, Dozy AM: Polymorphism of DNA sequence adjacent to human beta-globin structural gene: Relationship to sickle mutation. Proc Natl Acad Sci USA 75:5631-5635, Nov 1978

Alter BP: Prenatal diagnosis of hemoglobinopathies and other hematologic diseases. J Pediatr 95:501-513, Oct 1979

## The Value of Microsurgery in Tubal Repair

The microsurgical approach has been applied to every form of tubal repair, but its value has been definitely established only in reversal of female sterilization. Microsurgery appears to be of some value in repair of salpingostomy in cases of chronic pelvic inflammatory disease in that it results in 25 percent to 30 percent intrauterine pregnancies; at the same time, however, it increases the rate of ectopic pregnancies from between 2 percent and 4 percent to between 10 percent and 18 percent. It is of technical value in implantation procedures, but in only one report has the technique improved the percentage of intrauterine pregnancies reaching term.

Success with reversal of sterilization largely depends on how the sterilization was originally done. Unipolar cautery yields the worst prognosis for reversal whereas use of a tubal clip appears to allow the best. Bipolar cauterization, the Falope Ring and the Pomeroy techniques offer an intermediary prognosis. The site of anastomosis is also pertinent to prognosis. An anastomosis between the cornu-isthmus or isthmus-isthmus yields the best results (a pregnancy rate of 70 percent to 75 percent). Poorer results (a pregnancy rate of 45 percent to 55 percent) are obtained when the anastomosis involves the cornu-ampulla or ampulla-ampulla.

When microsurgical techniques are used to reverse sterilization, intrauterine pregnancy rates of 58 percent and 65 percent have been reported in large series of patients by Winston and Gomel, respectively. In a smaller series (47 patients) followed for more than 18 months, Gomel reported a pregnancy rate of 81 percent. By comparison, *macro*surgical techniques for reversal of sterilization have resulted in 21 percent to 37 percent pregnancy rates.

Despite variations in technique, it is evident that microsurgical procedures for the reversal of sterlization in women offer substantially improved results.

Carl J. Levinson, MD

REFERENCES

Daniel RK, Terzis JK: Reconstructive Microsurgery. Boston, Little, Brown, and Co, 1977

Winston RML: Reversal of tubal sterilization. Clin Obstet Gynecol 23:1261-1268, Dec 1980

Gomel V: Microsurgical reversal of female sterilization: A reappraisal. Fertil Steril 33:587-597, Jun 1980

## Antiprostaglandin Compounds in the Management of Primary Dysmenorrhea

While the exact incidence of dysmenorrhea is unknown, it appears to affect 30 percent to 50 percent of young women, causing them to lose time from work and school.

Primary dysmenorrhea occurs only in ovulatory cycles and is characterized by an absence of pelvic pathology and the presence of a variable number of systemic symptoms, including nausea, vomiting, diarrhea, headache, fatigue, dizziness and lower backache.

In the 1950's it was first suggested and subsequently proved that excessive prostaglandin action results in many of the symptoms of dysmenorrhea. In the early 1970's several papers were presented that indicated that nonsteroidal anti-inflammatory agents such as aspirin, indomethacin and naproxen, inhibited uterine contractions. Arachidonic acid is converted to prostaglandin through a number of steps. The first is the formation of a cyclic endoperoxidase. It is this step that is inhibited by the nonsteroidal anti-inflammatory drugs to prevent the production of excess prostaglandin.

A clearer understanding has been gained of the pathophysiology of dysmenorrhea and the efficacy of these inhibitors of prostaglandin synthesis in providing symptomatic relief, with the result that naproxen sodium and ibuprofen are among the drugs approved by the Food and Drug Administration for treatment of primary dysmenorrhea. Relief from symptoms is excellent for most patients, and these treatment compounds are well tolerated with minimal side effects. Most women who were formerly physically incapacitated by primary dysmenorrhea are now able to return to productive activity through use of these nonsteroidal anti-inflammatory compounds.

Frederick W. Hanson, MD

REFERENCES

Hanson FW, Izu A, Henzl MR: Naproxen sodium in dysmenorrhea: Its influences in allowing continuation of work/school activities. Obstet Gynecol 52:583-587, Nov 1978

Henzl MR: A new perspective on dysmenorrhea: The role of prostaglandins and prostaglandin inhibitors. J Reprod Med 25 (Suppl):191-242, Oct 1980

## A New and Effective Treatment of Hirsutism

Hirsutism, an androgen-dependent manifestation of accelerated hair growth, occurs in women having either ovarian or adrenal overproduction of androgens or hypersensitivity of hair follicles to androgenic stimulation (idiopathic hirsutism). In the past, satisfactory medical treatments have not been available. Recently, however, an understanding of the role of androgenic receptors in hair follicles combined with the characterization of several compounds that have antiandrogenic properties have afforded a new approach in the treatment of hirsutism.

Spironolactone (Aldactone), an aldosterone agonist, currently used as a diuretic and in the treatment of mild hypertension, has been found to possess several antiandrogenic properties. It has the ability to inhibit the cytochrome P-450 enzyme systems, which are required for the biosynthesis of androgens (by way of hydroxylation) in both the gonadal and adrenal steroid-producing cells and, consequently, result in reduced androgen secretion. It also inhibits the androgenic action of testosterone and its 5α-reduced metabolite, 5α-dihydrotestosterone by occupying the binding sites of cytosol and nuclear receptors in all target tissues including hair follicles. Thus, the combined inhibitory effects on androgen production and action of spironolactone make it an ideal pharmacological agent for the treatment of hirsutism. Clinical trials by us and others have demonstrated that spironolactone reduces facial hair growth within three months with remarkable efficiency. A dosage regimen of 25 to 100 mg per day of spironolactone reduced testosterone and androstenedione production by 30 percent to 60 percent. Spironolactone is equally effective in idiopathic hirsutism and hirsutism due to ovarian androgen excess, such as in the polycystic ovary syndrome. These observations are consistent with the peripheral and glandular sites of action. Further, we have shown that the inhibition of androgen production is selective upon ovarian steroiodogenesis and not upon adrenal steroidogenesis, which is an important consideration for long-term administration of spironolactone. In the long-term treatment (up to 16 months) of 30 patients during the past four years, we have not observed any significant side effects. Thus, it would appear that spironolactone is a safe and effective drug in the treatment of hirsutism.

S.S.C. Yen, MD

REFERENCES

Boisselle A, Tremblay RR: New therapeutic approach to the hirsute patient. Fertil Steril 32:276-279, Sep 1979

Shapiro G, Evron S: A novel use of spironolactone: Treatment of hirsutism. J Clin Endocrinol Metab 51:429-432, Sep 1980

Cumming DC, Yang JC, Rebar RW, et al: Treatment of hirsutism with spironolactone: Endocrine and clinical effects. JAMA 1981 (In press)

## Severe Cardiovascular Complications Associated With β-Sympathomimetic Tocolysis and Their Prevention

Transient Myocardial ischemia, cardiogenic pulmonary edema and fatal myocardial insufficiency have been reported in association with β-sympathomimetic therapy for inhibition of preterm labor. The incidence of such severe cardiovascular complications is not known for most of these agents but is estimated to range from less than 1 percent for intravenously administered isoxsuprine (Vasodilan) to 5 percent for terbutaline (Brethine, Bricanyl) given intravenously. Because the causes of these complications are unknown, it is important to recognize several clinical features that characterize the development of cardiovascular compromise in these patients:

- Marked increase in cardiac work resulting from increased stroke volume and heart rate.
- The presence of multiple fetuses, which is known to be accompanied by increased plasma volume and cardiac output values.
- Excessive administration of fluids (crystalloids in particular) in the presence of fluid and sodium retention, resulting in decreased hematocrit and colloid osmotic pressure. This fluid retention is thought to be caused by activation of the renin-aldosterone axis.
- Hypokalemia without increased urinary potassium secretion, indicative of a shift of potassium into the intracellular compartment.
- Prolonged therapy—for at least 24 hours in most cases.
- Absence of correlation between the rate of drug administration and the development or severity of symptoms. Most patients have been treated with drug doses in the lower half of the accepted therapeutic spectrum.
- Prompt resolution of signs and symptoms after discontinuation of the drug, with or without induced diuresis.

Recently, the first β-sympathomimetic agent was approved by the Food and Drug Administration for use in the treatment of preterm labor; therefore, more patients will be exposed to possible severe adverse cardiovascular side effects of the drug. Physicians should include the following measures in the clinical management of patients receiving β-sympathomimetic tocolytic therapy:

- Monitor cardiovascular signs and symptoms frequently, especially in patients with multiple fetuses.
- Observe fluid balance carefully by accurately

recording fluid intake and output as well as patient's daily weight (restrict fluid intake if fluid is retained).

- Avoid prolonged tachycardia (> 140 beats per minute).
- If abnormal signs and symptoms develop, carry out tests such as an electrocardiogram, roentgenogram of the chest and echocardiogram before continuing therapy.
- Obtain baseline and follow-up blood specimens to monitor hemoglobin, hematocrit and electrolyte concentrations in patients receiving intravenous therapy.

$\beta$-Sympathomimetic drugs are useful in attempting to inhibit preterm labor; however, occasional cardiovascular complications may occur. In most patients, increased awareness, preventive measures, early diagnosis and prompt therapy will result in a good outcome.

Michael Katz, MD

REFERENCES

Jacobs MM, Knight AB, Arias F: Maternal pulmonary edema resulting from beta-mimetic and glucocorticoid therapy. Obstet Gynecol 56:56-59, Jul 1980

Katz M, Robertson PA, Creasy RK: Cardiovascular complications associated with terbutaline treatment for preterm labor. Am J Obstet Gynecol 139:605-608, Mar 1981

## Chlamydial Infections in Obstetrics and Gynecology

*Chlamydia trachomatis* has been identified as a major sexually transmitted pathogen in industrialized countries. It is estimated that there are 3 million cases of chlamydial infection occurring annually in the United States. *C trachomatis* is an obligatory intracellular bacterium that depends on the infected host cell for nutrients and energy. There are 15 known serotypes of *C trachomatis;* serotypes D, E, F, G, H, I and K are involved in eye, genital tract and perinatal infections.

The cervix is the site most commonly infected with *C trachomatis* in the female genital tract. A patient may be asymptomatic or may have endocervicitis with a mucopurulent discharge and hypertrophic ectropion.

Inclusion conjunctivitis of newborns has been recognized since the first decade of this century. However, it was not until the late 1970's, with the impetus of the report by Beam and Saxon, that extraocular chlamydial infections in infants were recognized. It is now clear that inclusion conjunctivitis of newborns is not a rarity, but probably the most common form of conjunctivitis seen in the first month of life, and that shlamydial pneumonia of infants is one of the relatively common causes of pneumonia in the first six months of life. An infant born to a woman with a chlamydial infection of the cervix is at 60 percent to 70 percent risk for acquiring infection during passage through the birth canal. In approximately 25 percent to 50 percent of exposed infants conjunctivitis will develop and in approximately 10 percent to 20 percent of the infants pneumonia will occur. Transplacental transmission is not known to occur. Chlamydial conjunctivitis is not prevented by application of silver nitrate drops. Treatment consists of administration of erythromycin, tetracycline ointment or sulfa drops. The recommended treatment for chlamydial pneumonia in infants is 40 mg of erythomycin per kg of body weight, given in four divided doses for 14 days.

Preliminary studies have suggested that pregnant women from whom *C trachomatis* organisms have been recovered have a significantly increased risk for the development of late-onset endometritis following vaginal delivery. A possible role for *C trachomatis* in spontaneous abortion, fetal deaths, and preterm labor and delivery has also been suggested.

When considering chlamydial infections of the female genital tract, the only laboratory test that is useful in routine diagnosis is isolation of *C trachomatis* in susceptible tissue culture cell lines. This requires access to a virology laboratory. Cytology is not successful in diagnosing cervical infections because of limited sensitivity. Serological testing is not useful in detecting lower genital tract infections because of high background prevalence rates of antichlamydial antibodies in sexually active populations. However, it may be useful in systemic disease, such as salpingitis, or pneumonia in newborns. The serological test of choice remains the microimmunofluorescent test of Wang and Grayston.

Richard L. Sweet, MD

REFERENCES

Schachter J: Chlamydial infections. N Engl J Med 298:428-435, 490-495, 540-549, Feb 23, Mar 2, Mar 9, 1978

Richmond SJ, Oriel JD: Recognition and management of genital chlamydial infection. Br Med J 2:480-483, Aug 12, 1978

Mardh P-A, Ripa T, Svensson L, et al: Chlamydia trachomatis infection in patients with acute salpingitis. N Engl J Med 296:1377-1379, Jun 16, 1977

## Ovarian Carcinoma: In Vitro Testing of Sensitivity to Chemotherapy

The pharmacology of cancer cells in humans, including mechanisms of resistance and methods of predicting drug activity, is being tested in vitro by a stem cell assay. Thus, ovarian carcinoma, a tumor with clinically demonstrated sensitivity to a variety of antineoplastic agents, can be studied by the use of disaggregated cells from fresh operative specimens or malignant effusions that are suspended in 3 percent agar in an enriched medium. Tumor stem cells, which are responsible for the continued growth of metastatic lesions, form colonies (collections of more than 40 cells) in the medium within 10 to 21 days.

Drugs to be tested for activity against ovarian carcinoma are added to the cell suspension in three different concentrations. After an hour, the cells are washed and prepared for culture. Colonies from a control and three treated media are counted after 14 days through an inverted phase microscope to determine drug effect.

A quantitative sensitivity index of tumor stem cells to each drug can be determined graphically from linear curves that compare drug concentration with colony survival. For each drug, a limit of sensitivity is selected on the basis of preliminary experimental data, and tumors are classified as sensitive if the area under the curve does not exceed the chosen limit.

Patterns of drug activity in vitro can be correlated with subsequent clinical response and tumor specimens can be obtained serially in some patients, providing an opportunity to study the development of drug resistance. It is hoped that the stem cell assay can be used as an initial guide to appropriate chemotherapy and, also, can obviate the need for treatment with toxic drugs to which the tumor is insensitive. To date, the assay appears predictive of response in about 65 percent of cases and of resistance in about 90 percent.

Samuel C. Ballon, MD

REFERENCES

Hamburger AW, Salmon SE: Primary bioassay of human tumor stem cells (a). Science 197:461-463, Jul 29, 1977

Salmon SE, Hamburger AW, Soehnlen B, et al: Quantitation of differential sensitivity of human-tumor stem cells to anti-cancer drugs. N Engl J Med 298:1321-1327, Jun 15, 1978

Alberts DS, Chen HSG, Soehnlen B, et al: In vitro clonogenic assay for predicting response of ovarian cancer to chemotherapy. Lancet 2:340-342, Aug 16, 1980

## Two Mechanisms of Late Decelerations: Reflex and Myocardial Hypoxia

The current theory that late decelerations are due to fetal hypoxia and are, therefore, ominous, does not explain a number of clinical observations. For example, (1) infants born after a prolonged series of late decelerations, even up to several hours in some cases, are not necessarily depressed (low Apgar scores) or acidotic provided fetal heart rate (FHR) variability has been maintained. (2) Infants born after a positive oxytocin challenge test (or contraction stress test) are not necessarily depressed or acidotic at birth. (3) Early decelerations are thought to be due to fetal head compression. The presumed mechanism is a transient change in cerebral blood flow resulting in vagal discharge due to hypoxia. However, such infants are not depressed or acidotic.

Recent animal experimentation, clinical observation and a review of some decades-old human fetal data support the belief that late decelerations are of two types.

Reflex late decelerations, the first type, are seen when a sudden acute insult, such as maternal hypotension, is superimposed on a previously normally oxygenated fetus. These late decelerations are caused by a decrease in uterine blood flow (with the uterine contraction) that makes it impossible for the fetus to extract sufficient oxygen. The deoxygenated blood is carried from the fetal placenta, through the umbilical arteries to the heart and distributed to the aorta, neck vessels and head. Here the low oxygen tension is sensed by chemoreceptors, and neuronal activity results in a vagal discharge that causes the transient deceleration. The deceleration may be late because of the circulation time from the fetal placental site to the chemoreceptors. Between contractions, oxygen delivery is adequate.

These late decelerations are accompanied by normal FHR variability and, thus, signify normal central (for example, the brain or heart) oxygenation; that is, the fetus is physiologically compensated. Centralization of the fetal circulation, a well-recognized fetal response to moderate asphyxia, results from vasoconstriction of nonpriority organs, such as muscle and gut, and increase or maintenance of blood flow to the vital organs, such as the brain, heart and placenta.

Early decelerations, which are mild in depth and usually associated with normal FHR variability, most likely result from the same mechanism as the reflex vagal late decelerations just described.

The second type of late deceleration is initiated in the same manner as the first type except that the deoxygenated bolus of blood from the placenta is also insufficient to support myocardial action. Direct myocardial hypoxic depression as well as vagal activity result. This type of deceleration is seen with more prolonged asphyxia and is recognized by decreased or absent FHR variability, which signifies fetal decompensation—that is, inadequate fetal cerebral and myocardial oxygenation. This condition is seen most commonly in states of decreased placental reserve, such as preeclampsia, intrauterine growth retardation or following prolonged stress (for example, prolonged severe variable or late decelerations).

The first type of late deceleration is best decribed as a stress pattern, which is usually reversible by appropriate treatment, such as maintenance of maternal blood pressure, avoidance of excessive uterine activity, lateral position to maximize placental blood flow and maternal hyperoxia. The second type of late deceleration should be described as a sinister pattern that requires rapid attempts to alleviate it and, if this fails, expeditious delivery of the fetus.

J.T. Parer, MD, PhD

REFERENCES

Martin CB Jr, de Haan J, van der Wildt B, et al: Mechanisms of late decelerations in the fetal heart rate—A study with autonomic blocking agents in fetal lambs. Europ J Obstet Bynec Reprod Biol 9:361-373, Dec 1979

Parer JT, Krueger TR, Harris JL: Fetal oxygen consumption and mechanisms of heart rate response during artificially produced late decelerations of fetal heart rate in sheep. Am J Obstet Gynecol 136:478-482, Feb 15, 1980

*Reprinted with permission from The Western Journal of Medicine, June 1981*

# The Microcomputer in Medical Practice

JOHN R. HAYES, M.D.

## Introduction

Much has happened in the three years since we installed an IBM 5100 minicomputer in our two-physician Internal Medicine practice. Our experience with the IBM has been described in a previous article.[1] Now we can describe an improved situation where performance has improved and costs have come down substantially.[2]

In 1978 we considered it an achievement to have 3,000 patient accounts in a system that cost just under $20,000. Now in 1981 we can fit 4,200 patient accounts on a system costing under $4,000 and 15,000 patient accounts on a larger micro system costing about $7,000.

Two developments have facilitated this welcome improvement. Firstly microcomputers* have improved in performance and reliability to rival the minicomputer* of former years. Secondly high quality professional software* programs are now widely available at minimal cost.

The past three years has seen a proliferation of low cost, high performance microcomputers produced by Tandy (Radio Shack), Apple, Commodore and Atari. Initially these were seen as home or personal computers—fun to play with but of little use for serious business. Surprisingly these first micro machines have developed to be just as powerful, flexible and reliable as big brother mini—at far less cost.

The market for micros is expected to expand even more with the announcement that IBM is about to join in—producing its first microcomputer based on a 16 bit* 8088 microchip—costing between $1,600 and $6,000. With adequate software (programming) support this will take the place of many of today's minicomputers threatening the market base of IBM's own smaller computers such as the 5120 and System 23.

We shall describe our present system which does everything our IBM 5100 did—but faster and much more economically.

## Hardware

Our present micro system consists of a Radio Shack TRS80 Model 11 with 64K of internal memory and three 8″ disk* drives. Each disk drive holds a diskette with 500K bytes* of storage capacity (500,000 characters—about 100,000 words of information. In addition we have a printer attached which prints at 120 characters per second. Finally we have a modem* attachment which links us to other computers by telephone. (Figure 1)

The basic computer (TRS80-11) costs about $3,800 with another $1,500 for two extra drives and a printer costing $1,200 for a total hardware price of $6,500. A smaller version (TRS80 Mod 111) costs about $4,000 fully equipped—a marked reduction from the $18,000 we paid in 1977 for the IBM 5100.

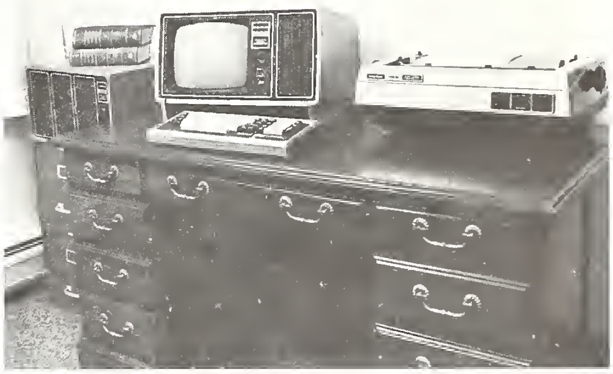


Figure 1

The author's TRS80 Model 11 microcomputer with disk drives and printer.

---

* See Glossary

JOHN R. HAYES, M.D., Department of Medicine, Windham Community Memorial Hospital, Willimantic, CT.

Reprint requests to: 37 Ivanhill Street, Willimantic, CT 06226. (Dr. Hayes).

Supplies are equally economical. The IBM used tape cassettes to store data at a cost of $22.00 each. Double the storage capacity is now available on the new floppy disks costing about $4.00 each. At two tapes a month the savings mount up over a four-year period.

### Software

Our present Medical Office System consists of programs which were developed on the IBM 5100 and then transferred to run on the more economical TRS80 111 and now on the larger but still economical TRS80 Model 11. We were able to take advantage of faster file access available with disk drives to improve response time for the operator in entering data.

The small TRS80 111 could store 1,400 patient records on each diskette for a total of 4,200 accounts—ample for 9,000 patients in the average primary care practice. Using the larger Model-11 allows for 15,000 accounts and up to ten physicians in a Group Practice.

We can store up to 500 procedures with CPT-4 codes, descriptions, fees and locations together with 500 common diagnoses with ICDA coding—depending on practice needs—in the TRS80-11. This contrasts with 200 procedures and 200 diagnoses on the TRS80-111 and a mere 100 procedures and diagnoses on our old IBM. The system will also cope with non-standard procedures and fees and unusual diagnoses.

A similar system designed for the TRS80-111 is now marketed by Tandy through all Radio Shack stores at a cost of less than $300—a far cry from the price of medical software available for the mini systems of two years ago—which typically ranged from $3,000 to $18,000—with equivalent performance and reliability. The benefit of large scale production with good packaged software and much lower user cost is plain to see.[3]

### Medical Office Software

The Medical Office System presently running in our office on the Tandy TRS80-11 microcomputer consists of a main menu setup as follows:

```
              MEDICAL OFFICE SYSTEM
                    Main Menu
<1> Daily Transactions   <8> Print Insurance Forms
<2> Edit Transactions    <9> Age Patient Records
<3> Daily Journal        <10>Monthly Statistics
<4> Monthly Journal      <11> Sort Patient Records
<5> File Maintenance     <12>Sort Transactions
<6> Print Patient List   <13>Print Statements
<7> Print Data Files     <F1>End Program
                 Select Function: ..
```

By selecting an item from the main menu the operator is guided through a series of sub-menus to enter information or to print reports.

1. *Daily Transactions.*

All transactions are entered using this program.

Procedures performed and payments received are entered together with diagnostic and physician information required for Insurance and billing purposes. The information is obtained from a charge sheet which accompanies the patient's clinical record in the office. The standard AMA Insurance Claim Form is printed at the time of data entry—ready to be attached to the patient's own insurance form and forwarded to the Insurance Carrier concerned.

Fortunately we are witnessing a welcome standardization of claim forms and procedure/diagnostic coding—with encouragement from the Federal HCFA and the AMA Council on Medical Service.

2. *Edit Transactions.*

This function corrects the inevitable data entry errors that are made—usually discovered at day's end with the printing of the Daily Journal.

3. *Daily Journal.*

This is a list of all patients seen, procedures performed and payments received during the day. It is used to reconcile cash and checks received before bank deposit. (Figure 2)

4. *Monthly Journal.*

This program scans the month's transaction records and prints a summary of activity by date and by individual physician.

5. *File Maintenance.*

This program has a series of sub-menus to enter, change or delete records in the following files:

a) *Patient File.* Each patient or family has a record to maintain basic information such as name, address, telephone, physician, insurance and financial information such as balance due and date of last payment. The system may hold up to 15,000 such account records—with every account number being verified for accuracy while entering daily transactions.

b) *Procedure File.* Five hundred procedures with CPT codes, fees and location according to practice requirements are held on file and used during transaction entry.

c) *Diagnostic File.* Five hundred diagnoses with ICDA coding are also held on file ready for entry into the transaction records.

d) *Practice File.* This file holds the Practice address together with names and license numbers of up to ten physicians—ready for printing on Insurance Claim Forms.

e) *Insurance File.* This holds the names of ten common Insurance Companies (including Medicare and Medicaid Carriers)—for use in printing reports on accounts receivable.

f) *Referring Physician File.* This is an optional feature for specialist practices to record the names of referring physicians when patients are seen in consultation.

6. *Print Patient Records.*

This prints a list of patient accounts—either a master list showing name, address and phone or a list showing accounts due—aged for 30, 60, 90 and 120 days together with phone numbers and date of last payment.

7. *Print Data Files.*

This provides a print-out of the other data files such as Procedure Records, Diagnostic Records and Referring Physicians. It provides the current fee schedule used in the practice and the common diagnoses used with the code numbers to be used in transaction entry.

8. *Print Insurance Forms.*

Information may be obtained from the month's transaction records to print Insurance Claim Forms for specified patients—such as those in hospital during the month.

9. *Age Patient Records.*

This program scans the month's transaction records and updates information in the Patient File. The balance due is aged into 30 - 120 day categories and the date of last payment is recorded.

10. *Monthly Statistics.*

This program again extracts information from the month's transaction records. It lists numbers of procedures performed together with total charges for each procedure. In addition it lists all diagnoses recorded with total numbers for each diagnosis during the month. (Figure 3)

11. *Sort Patient Records.*

This program keeps track of all patient records both numerically and alphabetically. As new patients are added to the system the records are merged so that any patient may be located by account number or by name. The sort process also keeps the verify function up to date to make sure that the correct account number is used for each patient during transaction entry.

12. *Sort Transactions.*

At the end of the month all transactions entered—both procedures performed and payments made—are sorted into account order ready for billing.

13. *Print Statements.*

Information from the Patient's File such as name and address is merged with the month's transaction records to produce a detailed statement—listing all procedures, charges and payments during the month. The statement is mailed to the patient for payment while a separate office copy is printed ready to deal with any billing enquiries.

The above description of the Medical Office System is necessarily brief but it does cover the main requirements of an efficient software package for a medical practice. Other refinements can be added once the main financial and management controls are in place. However, the microcomputer system must justify itself on cost effective grounds before clinical uses become feasible.

Figure 2

```
                      DAILY JOURNAL FOR 08/07/81
ACCOUNT      NAME           CODE      CHARGES      CASH       CHECKS
---------------------------------------------------------------------
1453         JOHN SMITH     9006       20.00                   10.00
.
2315         MARY KENT      9006       20.00
.                           9101       25.00
.                                                  30.00
0098         JOAN ROPER     9004       15.00
1120         TOM JONES      9006       20.00
.                           8628        9.45
.                                                  29.45
---------------------------------------------------------------------
TOTALS                                109.45       59.45       10.00
TOTAL RECEIPTS:      69.45
TOTAL CHARGES:      109.45
```

Figure 3

```
                         PROCEDURE STATISTICS
08/07/81
       DESCRIPTION              CODE     CHARGE     COUNT        MTD
1    OFFICE VISIT               9006      20.00      120      2400.00
2    HOSPITAL ADMISSION         9022      55.00       10       550.00
3    HOSPITAL VISIT             9024      20.00       35       700.00
4    CBC                        8628       9.45        2        18.90
5    ELECTROCARDIOGRAM          9101      25.00        5       125.00

TOTAL:                                               172      3793.90
```

## Problems

1. *Reliability.*

The early micros were fragile. They were made from low cost components with fragmented modules that gave rise to frequent hardware problems. Information could be lost and diskettes destroyed from faulty drives or inadequate operating system software.

Technology has advanced. The new generation micro is a much more reliable, rugged and integrated machine. The software problems have been largely resolved and new operating systems incorporate many fail-safe devices to trap problems before information is lost. It is still a wise precaution to back up all data diskettes on a daily basis. Spare diskettes are cheap but lost practice information can be an expensive lesson.

2. *Service.*

The larger minicomputer manufacturer such as IBM, has a superb service organization. If any problem developed a representative would be at the door within two hours to repair or replace the problem part. We paid for this service—a typical service contract cost about $130 per month but it did give peace of mind.

A similar service contract is available from the larger micro manufacturers—but it is rarely used. The cost of the micro is so low that it is quite practical to have a spare machine on the premises—used for other purposes such as word processing or inventory control. If any problem develops the spare micro can be brought into use while the problem is being fixed at the local micro service center.

It is expected that many purchasers of the new IBM micro personal computer will adopt the same strategy of using a back up while the first micro is being repaired.

## The Future

Microcomputers will continue to grow in features while mass marketing will keep the price down. Larger storage will become available with the present 8″ diskettes leading to hard disk storage holding five to ten million bytes of data. Faster processing with larger internal memory is presently available from new generation micros such as the TRS80-11 and the Apple-111. IBM's entry into the micro field with 16 bit internal processors and even larger internal memory is an exciting development which threatens to blur even more the traditional distinction between the low-cost micro and the more powerful minicomputer.

The Medical Office System described above has grown and developed during its progression from the original IBM 5100 to the Tandy TRS80 1/111 and now to the Tandy TRS80-11. Yet the software costs remain low—the present Medical Office System as described for the TRS80-11 sells for less than $500.—with the smaller Model 1/111 system costing less than $300.

The present system copes with 15,000 patients. Larger numbers would require a hard disk for storage and a compiled form of Basic to increase speed. Both requirements have been met—compiled forms of Basic are available from Tandy and from Microsoft while hard disk* drives have been announced for delivery in 1982. This increased capacity will allow for ten to twenty million bytes of data to be stored on line. With such capacity it is feasible to have a number of operators using the system at one time (up to 64 terminals would be possible in one such large configuration).

The same micro hardware can be used for many different purposes in addition to the basic Medical Office System described. Software packages are readily available for word processing, inventory control, mailing lists and communications.

Within the very near future we will be maintaining clinical records on magnetic disk with a display terminal in the physician's office. Patient records could be transmitted by telephone modem for hospital or home reference. Radiology and Laboratory reports could be transmitted directly to the patient record—for review by the physician without the present mass of paper reports we deal with every day.

Confidentiality of records would be assured by limiting access to computer information to authorized personnel using secure passwords—and then only within limits set by the physician. The system would certainly be more secure than our present system where clinical information is written down on paper for anyone to read.

## Conclusion

The object of all this microcomputer technology is to improve the quality of medical care. By freeing the physician from many management chores, we make his practice run more efficiently and give more time for clinical care.

By eliminating much of the present mass of paper records we bring the required information to the point of use and improve the quality of patient-physician interaction.

Using the new microcomputer tools available to us we can improve our performance as physicians. We can blend the Science and Art together in a manner undreamt of a few short years ago. We are at the beginning of the micro revolution.

### REFERENCES

1. Hayes & Truebig: "The Computer in the Medical Office." Con Med 241-244, April 1979
2. Hayes & Truebig: "Medical Care & Microcomputers." Third Symposium on Computers in Medical Care," October 1979
3. Tandy Corporation. "Medical Office System for the TRS80." Cat #26-1568

## GLOSSARY OF COMPUTER TERMS

The following glossary of terms used in the accompanying article is provided for those readers who are not familiar with Computer jargon.

**BASIC:** The programming language used in most microcomputers.

**BITS:** The fundamental units of software which are coded as 1 or 0 and read by the computer as being on or off. The human programmer rarely descends to these intimate depths to write his software code—it is far too tedious and prone to human error.

**BYTES:** These are units made up of eight bits and are the equivalent of one character (numerical or alphabetical) of data (information).

**COMPILED BASIC:** A more advanced form of Basic which is becoming available for some of the more advanced micro systems—increasing speed and performance without a change in Hardware.

**DATA:** Jargon for information stored in bytes and organized in records inside a file.

**DISK:** Similar to a phonograph record in appearance. Data are stored on the disk in concentric tracks which can be read by a moving disk head and fed into the Internal Memory when required. Similarly data stored in the Internal Memory can be written to a record on the disk for permanent storage. Disks vary in size from 5¼ inch to 8 inch and can store from 80K to 500K of data.

**FILE:** A collection of Records under a common File Name which is listed in the Disk Directory.

**HARD DISK:** A series of disks arranged in pancake fashion with multiple disk heads which glide in hermetically sealed chambers just above the surface—capable of storing far more information than the single Disk—typically ranging from 5MB (5,000,000 bytes) to 100MB and above—well into the rarified atmosphere of the large main frame computers.

**HARDWARE:** The various component parts of the computer as they sit on the desk in front of you. Includes the keyboard, display screen, disk drives and other odd grey boxes joined by wires and cables.

**MEMORY:** The internal storage capacity of a computer measured in kilo-bytes. The micro memories range from 4000 bytes (4K) for the smaller units to 64K for larger business oriented micros. Ever larger memory units are becoming available with each new micro produced. The IBM micro memory ranges from 16K to a massive 256K which is large enough to swallow the contents of a 50,000 word novel with room to spare.

**MICROCOMPUTER:** Traditionally a small computer with a 8 bit micro-processor to handle data. IBM have knocked this definition by producing a microcomputer containing the larger 16 bit processor which was used to define the Minicomputer.

**MINICOMPUTER:** Traditionally a computer using a 16 bit micro-processor which gave it more power and speed than the smaller micro but not as big or as powerful as the 32 bit Main-frame. Technology has blurred these traditional differences—with the today's micro equal in performance to last year's mini.

**MODEM:** A black (grey) box to connect the computer to the telephone and thus enable communication with other computers similarly equipped with Modems and telephones.

**RECORDS:** A collection of Bytes organized to provide meaningful information such as Name and Address. Records may have a fixed number of Bytes within which the information must fit—in which case each record can be accessed directly by its number or place within the File without having to read all the preceeding records to find it.

**SOFTWARE:** The coded instructions written as programs to entice the Hardware into doing something useful.

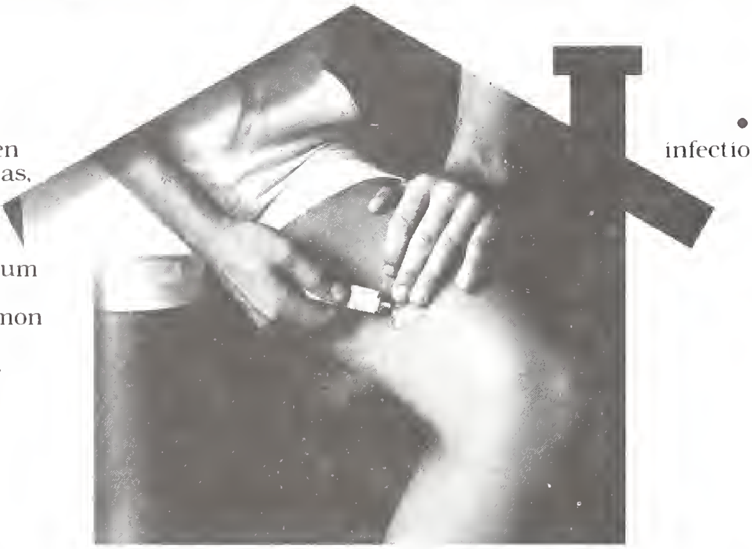
**works well in your office...**

**NEOSPORIN® Ointment**

(polymyxin B-bacitracin-neomycin)

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**works just as well in their homes.**



- It's effective therapy for abrasions, lacerations, open wounds, primary pyodermas, secondarily infected dermatoses.
- It provides broad-spectrum overlapping antibacterial effectiveness against common susceptible pathogens, including staph and strep.
- It helps prevent topical infections, and treats those that have already started.
- It contains three antibiotics that are rarely used systemically.
- It is convenient to recommend without a prescription.

**NEOSPORIN® Ointment—for the office, for the home.**
(polymyxin B-bacitracin-neomycin)

**Effective • Economical • Convenient • Recommendable**

Each gram contains Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

**WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

**PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

**ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

Wellcome

**Burroughs Wellcome Co.**
Research Triangle Park
North Carolina 27709

# Hepatitis A, B and N: Some Practical Aspects

HANS H. NEUMANN, M.D.

The three types of hepatitis: A, B and non-Anon-B (which last will be called Hepatitis N) are caused by viruses unrelated to each other. What they have in common is their preference for liver cells as a nesting place.

## Clinical Similarities

All three infections may be asymptomatic. If there is disease, it may occur in all degrees of severity, depending on factors of individual susceptibility and on the massiveness of the exposure to the virus. Most illnesses are mild, many without noticeable jaundice.

In all three types, overt illness is usually preceded by a week of malaise with non-localized symptoms. This is followed by nausea, vomiting, and jaundice of varying degrees. After the acute attack, adults may be debilitated for a month or more. Because of the great variability in the severity of the illness, the three types cannot be distinguished clinically, though hepatitis B and N tend to have a prolonged course.

A difference between the types of viral infections lies in their incubation periods: about four weeks for hepatitis A; 12 weeks for hepatitis B; from 4 to 12 weeks for hepatitis N, which suggests that this type may comprise more than one disease entity. In all three types, symptoms are milder in children particularly those under the age of three; jaundice in children is rare. The disease is more severe in older age groups.

Each type confers life-long immunity against reinfection with the same viral strain; however, there is no cross-immunity among the three types of hepatitis.

## Hepatitis A

The hepatitis A virus is excreted in large quantities via the stools. This occurs early before symptoms are evident. One week after onset of disease only 10% of the cases still excrete the virus; in the second week this occurs only rarely.[1] Thus, person-to-person infection with hepatitis A is more likely to happen from seemingly healthy individuals than from those who are ill.

The virus of hepatitis A is killed by heat in shorter periods and at lower temperatures than the hepatitis B virus.[2] Temperatures of 60°C will inactivate the virus in 40 minutes; it will not survive boiling for one minute.

Foodborne outbreaks are almost always due to uncooked food or food touched after cooling by human hands. Salads, glazed doughnuts, custards, sliced meats have been implicated. Hepatitis A is rarely fatal and it does not produce chronic liver disease.

## Hepatitis B

This infection was earlier called serum hepatitis or homologous serum jaundice. These terms have been replaced by hepatitis B. The hepatitis Bs (surface) antigen was formerly called Australia Antigen.

In contrast to the hepatitis A virus, the B virus does not appear in the stools because it is inactivated by enzymes in the intestines. It rarely causes epidemics, except through the use of shared needles or contaminated instruments in invasive procedures. The hepatitis B virus has been found to be present in blood, saliva and semen, and it is quite stable outside the human body, which can account for its transmission in homes, hospitals and dental offices, and from unknown sources. Most cases of hepatitis B have no knowledge of needle, blood or any other exposure.[3] The virus is transmissible through close contact, as in households. High rates of sexual transmission have been observed.[4] Another high risk group is health-care workers.[5]

Since tests for this infection were developed, it has been found that it is far more common than previously thought.

If symptoms appear they become evident three or four months after infection. Many infections remain entirely asymptomatic; most are mild, and others—less than one percent of those hospitalized—are fulminant or fatal.[6] Jaundice occurs in less than ten percent of those infected. Chronic liver disorders may follow in about five percent of the cases that had symptomatic disease. About ten percent of those infected remain carriers for long periods of time.

---

HANS H. NEUMANN, M.D., Medical Director, New Haven Health Department.

### Hepatitis N

The diagnosis of this type (non-A non-B or NANB) is made by exclusion. There may be more than one disease entity involved.

The transmission takes place in much the same way as hepatitis B, except that nearly all transfusion hepatitis is considered to be hepatitis N, since there are no tests for it.

While most patients recover from hepatitis N without sequalae, and the illness is usually milder and of shorter duration than hepatitis B, some develop chronic, active hepatitis with persistent high liver enzyme levels and late-morbidity.[8, 9]

### Prophylaxis for Family and Other Contacts

Hepatitis A is clinically prevented by giving 2ml of immune serum globulin to household contacts. Non-household contacts should also receive it if exposure was through an infected person who acted as preparer or handler of food. Because of previous, usually subclinical infections, about one-third of all American adults are immune to the hepatitis A virus. It is not necessary to first test for it if immune serum globulin is to be given for hepatitis A prevention.

Ordinary immune serum globulin (ISG) provides little protection against hepatitis B and N. A high potency immune serum globulin against hepatitis B is available, but it is expensive. If its use is contemplated, as after accidental puncture with a needle contaminated with blood from a hepatitis B patient, testing for hepatitis Bs (surface antigen) should be done to determine whether the B specific Immune Serum globulin is, in fact, needed. It need not be given to persons immune to hepatitis B.

### Effectiveness of Immune Serum Globulin

For the adult of average weight, the protective value of immune serum globulin lasts for six to eight weeks, with gradually declining effectiveness. It prevents clinical hepatitis A, but it does not prevent subclinical infections which are followed by immunity.

The pooled ordinary ISG is slightly effective against hepatitis B and N and can prevent illness if the exposure was slight. Since clinical illness is related to the size of the viral exposure, it will not be protective if the infection was massive.

Household contacts to hepatitis B and N will not generally benefit from ISG, not only because it provides little protection against these agents, but also because infection may take place after long periods of time, after many months or even years of close contact, well after the effect of ISG would have worn off.

### For Travelers: immunization against hepatitis

For those traveling in highly endemic areas, ie, developing countries where sanitary standards are questionable—and this includes much of South Asia and of Africa—immunization with ISG is recommended. In these countries, infections with both hepatitis A and B virus are very common.[10]

One 2ml injection of ISG is sufficient for an adult of average weight for periods up to two months. If exposure to the infection will be longer, 1 ml per month is added to the 2ml up to a maximum of 5 ml for a six-month period. A dose of 5ml should be repeated semi-annually if exposure continues.

The injection should be given close to departure, since the effectiveness decreases with time. Children should receive proportionately smaller doses.

### Transfusion Hepatitis

Hepatitis A presents no hazard in this respect. Blood prepared for transfusion is tested for hepatitis B but no tests exist for hepatitis N. Therefore, hepatitis N is the most likely and the most common infection transmitted by transfusions. The probability of its occurrence is about one percent.

### Basic Hepatitis Tests

For the practitioner, familiarity with these tests will facilitate diagnostic decisions.[11]

1) The antibody hepatitis A test indicates whether permanent immunity to hepatitis A exists.

2) To distinguish between recent hepatitis A infection and persistent antibodies from an old infection, the antibodies to hepatitis A can be tested for their association with the immune globulin M fraction. This will be the case during and after the acute phase. Only five or six months after the infection do the antibodies become linked to the immune globulin G fraction. Tests, thereby, will show whether antibodies pre-existed or are due to a recent infection.

3) An anti-hepatitis Bs (antibody to hepatitis B surface antigen) test shows permanent immunity to hepatitis B. Persons who have this immunity, even without knowledge of a past infection, do not need the high potency hepatitis B ISG in case of exposure; and they are not at risk working with hepatitis B patients or in hepatitis B contaminated dialysis units.

4) The sequence of testing for children is for antibodies to hepatitis A, and if positive to determine whether it is linked to the IGM fraction, which would indicate a recent infection.

If these tests are negative, or if only the immune globulin G fraction contains antibodies to hepatitis A, tests for hepatitis Bs (surface antigen) and antibody hepatitis Bc (antibody to the Core antigen) should be done. If both are negative—the patient does not have hepatitis B; if either result is positive, the patient has hepatitis B.

5) In cases of hepatitis in young adults, in addition to the tests for hepatitis Bs (surface antigen), a slide test for infectious mononucleosis heterophile antibody may be added. If these are negative, anti-hepatitis Bc (Core antigen) and anti-hepatitis A igM should be done. In older adults the tests for mononucleosis may be omitted.

REFERENCES

1. Deinhardt F: In Viral Hepatitis. Edited by GN Vyas, SN Cohen and R Schmid. Philadelphia, PA, Franklin Institute Press, p 64, 1978
2. Peterson PA, Wolfe LG, Larkin EP, et al: infectivity of hepatitis A virus in human feces. J Med Virol 2:201-206, 1978
3. Center for Disease Control: Hepatitis Surveillance Report No 42, 1978
4. Redeker AG, Mosley JW, Gocke DJ, et al: Hepatitis B immune globulin as a prophylactic measure. N Engl J Med 293:1055-1059, 1975
5. Denes AE, Smith JL, Maynard JE et al: Hepatitis B infection in physicians. JAMA 239:210-212, 1978
6. National Center for Health Statistics: Hospital discharge survey. US Department of Health, Education and Welfare, 1978
7. Dienstag JL, Alaama A, Mosley JW, et al: Etiology of sporadic hepatitis B surface antigen-negative hepatitis. Ann Intern Med 87:1-6, 1977
8. Rakela J, Redeker AG: Long-term follow-up after $HB_sAg$ negative hepatitis. Gastroenterology 73:1241, 1977
9. Francis DP, Maynard JE: Transmission and outcome of hepatitis. Epid Rev 1:17-31, 1979
10. Szmuness W, Dienstag JL, Purcell RH et al: The prevalence of antibody to hepatitis A antigen. Am J Epidemiol 106:392-398, 1977
11. Iber F: Easier decisions in Viral Hepatitis for the practitioner. Editorial JAMA 245:849-850, 1981

---

## New Bipartisan Effort to Repeal Health Planning

**New Health Planning Repeal Bill Introduced.** On September 22, Representative Richard Shelby (D-Ala.) and Representative Edward Madigan (R-Ill.) introduced HR 4554, a bipartisan effort to repeal the National Health Planning and Resources Development Act effective September 30, 1982—the date on which current program appropriations authorizations expire. Along with Shelby and Madigan, the bill was co-sponsored by the following representatives:

Phil Gramm (D-Tex.)
William Hill Boner, (D-Ten.)
Carroll Hubbard, Jr. (D-Ky.)

Thomas J. Bliley, Jr. (R-Va.)
Gene Synder (R-Ky.)
John LeBoutillier (R-N.Y.)
Charles Pashavan, Jr. (R-Cal.)
Robert E. Badham (R-Cal.)

Representatives Shelby and Gramm are Democratic members of the Subcommittee on Health and the Environment of the House Energy and Commerce Committee and Representative Madigan is ranking Republican member of the Subcommittee. The Energy and Commerce Committee has jurisdiction over the health planning program.

In his remarks made on introducing the bill, Representative Shelby stated that it is clear that the health planning program has failed and that the law should be repealed. "The result of the law has not been planning, but regulation," Shelby stated. "The predominant activity is the certificate-of-need process which is not a planning tool but a means to control the health care system."

—Legislative Roundup, September 25, 1981

CONNECTICUT PHYSICIANS—
now there's a professional liability insurance
program that assures active participation
by your state and county medical associations

THE OFFICIALLY-ENDORSED
PHYSICIANS PROTECTION PROGRAM

As a Connecticut physician, you know malpractice is a pressing concern. And because no one knows the medical profession or your needs better than you and your fellow physicians, it's important to find a professional liability insurance program that integrates the knowledge and expertise of your state and county medical associations with the financial strength and know-how of a major insurance organization.

That's why your medical organizations worked together with CNA Insurance and the Arthur A. Watson Agency to develop the Physicians Protection Program. CNA has the strength and experience of over 25 years in the professional liability field. The Arthur A. Watson agency has more than a half century of risk management experience. Plus, the program launches a partnership between CNA, the Connecticut State Medical Society and your county medical associations that assures the active participation of these organizations in vitally important areas of your insurance program.

MAJOR FEATURES OF THE PHYSICIANS PROTECTION PROGRAM

- **Peer review panels oversee essential program function**—Your program has established peer review panels composed of county association physicians who help with loss control, provide expert review of all claims, and more.
- **No settlement without consent**—This program assures no claims will ever be settled without your prior approval. If CNA and your county peer review committee jointly recommend a settlement agreeable to the claimant, the liability limits for this claim will be the amount for which the claim could have been settled plus the amount of claim expenses up to the date of the recommendation.
- **Three-year stability guarantee**—CNA guarantees Physicians Protection Program stability for all participating members for three years. This guarantee can be extended annually.
- **Individual policy aggregates**—Each physician insured is covered individually up to the full policy aggregate.
- **Premium return mechanism**—This valuable feature can return a portion of your premium when you and your fellow participating county physicians keep losses low.
- **Full financial disclosure**—All financial data on the program will be disclosed to program participants twice each year.
- 50% premium reduction for eligible new first-year physicians.

LIMITS UP TO $5 MILLION AVAILABLE

**Professional liability**—Your Physicians Protection Program provides protection on an occurrence basis with standard limits up to $100,000 per claim/$300,000 aggregate. Higher limits up to $5 million are available.

Plus, optional coverages are available to provide property and liability protection for your buildings, office contents, and loss of income: personal liability protection; and standard Workers' Compensation and Employer's Liability statutory coverages.

SEND FOR ALL THE FACTS

Before you renew your current professional liability insurance get all the facts about the new officially-endorsed Physicians Protection Program. Call your county medical association or the program administrator today—it could be the most important call you make.

ARTHUR A. WATSON
& COMPANY, INC.
Professional Liability Division
225 Spring Street
Wethersfield, Connecticut 06109
(203) 563-8111

INSURANCE FROM
CNA

# A Decerebrate Patient: Eighteen Years of Care

ROBERT E. FIELD, M.D. AND RAYMOND J. ROMANUS, M.D.

This is a summary of the care given for eighteen years to a patient, who was decerebrate at mid-level, with quadraplegia, anesthesia and analgesia. During the entire period from her injury October 28, 1956, until death March 31, 1974, treatment was in a general community hospital.

## History

On October 28, 1956, an expert horsewoman, age 27, was riding her mount in an outdoor arena which was surrounded by a high wooden paddock fence with large upright posts. One of us (RF) was riding within a few hundred feet of the arena. In response to the cry of spectators, RF observed the horse standing riderless in the arena and the young woman lying on her left side, with her head next to an upright post. Within perhaps 20-30 seconds RF dismounted and was at the patient's side. She was deeply unconscious, not breathing, both pupils were dilated, and the peripheral pulse was absent.

The patient was rolled on her back and artificial respiratory maneuvers of her chest were begun. Shortly, her pulse became weakly perceptible and spontaneous respiratory activity gradually returned. During this time the ambulance arrived and oxygen was administered. There is no record of the exact time element which elapsed during these various phases of care. At no time during transit to the hospital did the patient regain consciousness. Her respirations were very slow and labored and the pulse was extremely weak. Transfer was directly from the riding area to St. Francis Hospital, Blue Island, a distance of approximately ten miles.

## Hospital Course

*1956—Age 27:*The patient was admitted to the hospital where resuscitation was continued. After IV feedings for several days, naso-gastric tube feedings were begun. There were times when very soft foods in small amounts were introduced and occasionally swallowed. The patient required frequent oral suction. The urine output was adequate, but she developed several episodes of urinary tract infection. There were occasional periods where the body would become rigid and spastic with occasional jerking. The Foley® catheter was changed about every three weeks, the naso-gastric tube about 10 to 14 days. Her position was changed every three to four hours with extensive skin care and range of motion exercises to the extremities three to four times a day. Antibiotics, aspirin and occasional Fleet® enemas were given. During this period she was seen by six neurologists and neurosurgeons.

*1957—Age 28:*The patient was transferred to the University of Illinois Research Hospital for thirty days. The evaluation resulted in a diagnosis of "suspect contusion cerebral cortex and basal ganglia; encephalomalacia of the internal capsule and/or midbrain due to hemorrhage, not improved." She was returned to the hospital, where she was again maintained on nasogastric feedings of approximately 2,000 calories a day. Occasionally, very soft oral feedings in small amounts were taken. During this time, she experienced some weight increase which was controlled by decreasing her caloric intake. She experienced several episodes of aspiration pneumonia and urinary tract infections. She was also begun on Dilantin® at this time for her convulsive disorders and spastic movements.

*1958—Age 29:* She was transferred for twelve days to Wesley Memorial Hospital for evaluation. Work-up was essentially the same with no change in the diagnosis. She had several severe convulsions with cyanosis during this year and the patient was noted to have regular menstrual periods.

---

ROBERT E. FIELD, M.D., is a specialist in general and thoracic surgery affiliated with St. Francis Hospital in Blue Island and Ingalls Memorial Hospital in Harvey. At Ingalls Memorial Hospital he has served as chairman of the department of surgery, president of the medical staff, and also chairman of the Cancer Committee and Tumor Board. At St. Francis Hospital he has served as chairman of the department of surgery and president of the medical staff. RAYMOND J. ROMANUS, M.D., is a specialist in general and thoracic surgery and a member of the surgical staffs of both St. Francis and Ingalls Memorial Hospital. Dr. Romanus is a fellow of the American College of Surgeons and also the International College of Surgeons.

*Reprinted with permission of the author and the Illinois Medical Journal, February, 1977*

*1959—Age 30:* The patient's weight was stable. She was having more frequent convulsive episodes. There was an abrasion on the buttocks which healed satisfactorily with routine care. There was also some redness of the coccygeal area for about four days which healed satisfactorily.

*1960—Age 31:* The patient was noted to have more difficulties with aspiration pneumonitis. The convulsions were persisting, with cyanosis at times. The Foley® catheter would have to be re-inserted more frequently and usually larger sizes were necessary.

*1961—Age 32:* The liquid intake was again 4800cc. This year, several units of whole blood were given for an anemia. She also underwent a thoracentesis at which time 200cc of fluid was obtained. There was a paracentesis of small amount of fluid. The patient was known to have an ileus during this period. The X-rays revealed a pleural effusion with question of a hemothorax and there was no growth on the culture of the aspirant fluid. There was some cloudy density of both lungs.

*1962—Age 33:* The patient's weight was regular. She has a small amount of purulent drainage from her toe, which responded to conservative treatment. The menses became somewhat irregular.

*1963-67—Ages 34-38:* During these years, the weight was fairly stable. The patient was maintained on Dilantin®. During this time, she was begun on IPPB whenever she would experience evidence of pneumonia. She would develop periocular edema which was treated with ointments. In 1964 she underwent a cystoscopic examination for a neurogenic bladder. She developed several episodes of dermatitis. Also her periods would occasionally be irregular with clots.

*1968-69—Ages 39-40:* She was still being occasionally fed small amounts of baby food which she would tolerate very poorly. Several episodes of febrile convulsions were noted during this period. The patient was noted to have an excoriated coccygeal area which was treated conservatively and after several months appeared to be healing satisfactorily.

*1970—Age 41:* No further attempts were made at oral feedings. The nutrition was adequately maintained by naso-gastric feeding. The patient usually appeared to be very congested, requiring extensive and frequent oral suctioning. She had increasing convulsions at this time.

*1971—Age 42:* This year the patient appeared to require constant care throughout the year with many episodes of febrile convulsions and cyanosis. She developed a vaginal infection and the perineal area became excoriated and treated with topical medications.

*1972—Age 43:* The patient's weight appeared to be increasing and the diet was gradually decreased. She was getting IPPB with Mucomist three to four times a day throughout the year. Vaporizer was maintained in her room. A small area of excoriation of the ear lobe was treated and the perineal and buttock rash cleared using various ointments. The patient began experiencing episodes of tremors and convulsions more frequently and required almost constant oral suctioning.

*1973—Age 44:* Occasionally she was given some diuretics during this time. The tremors persisted and increased in severity. Continual care with close observation was necessary. The menses became very scant and irregular during this year.

*1974—Age 45:* The patient at this time appeared to be retaining more of her body fluids. Her weight had increased. She was maintained on IPPB throughout this period. Genitourinary infection and tremors were increasing in severity. On March 21, abdominal breathing was noted and the respirations became extremely labored. The patient was maintained on oxygen, respiratory therapy, and antibiotics. On March 23, the urine output diminished. Her condition began to deteriorate rapidly and on March 31, the patient expired.

## Autopsy

## Final Anatomical Diagnoses

1. Focal acute and resolving bronchopneumonia.
    - Edema and focal hemorrhages.
    - Very extensive pulmonary fibrosis.
    - Foci of lipid pneumonia (endogenous).
    - Focal lipid granulomas.
    - Bone marrow emboli in small pulmonary artery.
    - Fibrosed granuloma.
    - Fibrous pleurisy.
2. Atrophy of the brain (850 grams).
    - Extreme atrophy of fronto-parietal cortices, most marked in the right hemisphere (cortex less than 0.1 cm. thick.)
    - Associated dilation of both lateral ventricles, most marked on the right side.
    - Fibrosis of overlying meninges.
    - All sections of the brain show microscopic loss of neurons with increased numbers of glial cells.
    - Areas consistent with old infarcts are noted in the right frontal cortex, left occipital cortex, and left basal ganglia.
    - Bilateral atrophy of hippocampal gyri.
    - Degenerative changes in cerebellum.
3. Focal chronic pyelonephritis, bilateral.
4. Atrophy of skeletal muscle with fatty infiltration.
5. Chronic cystitis with squamous metaplasia of the bladder epithelium.
6. Small uterine leiomyoa.
    - Follicle cysts in ovaries.

## Discussion

This case is presented from many interesting factors. The length of survival was indeed long, from October

28, 1956, to March 31, 1974. The patient was maintained mostly by naso-gastric tube feedings throughout this period. By changing the calories and amount of feedings her weight was satisfactorily controlled. The problems of aspiration and pneumonia, along with urinary tract infections were not unexpected. These were treated and usually responded satisfactorily. The difficulties with Foley® catheters resulted in frequent changes every two to three weeks with larger sizes being used throughout. The convulsions, which appeared to be controlled for some time with Dilantin®, gradually increased in severity and later Valium®, both intravenously and intramuscularly, was required. Other difficulties were occasional conjunctivitis and dermatitis. Pap smears were done during her hospital stay and were negative. Of course, the most remarkable features were the lack of large decubitae ulcers on the skin.

This case does show that excellent care was given in a general community hospital to a decerebrate, quadraplegic patient. During her hospital course, there were two transfers to teaching centers for evaluation. She was also seen by nine neurologists and neurosurgeons. The remainder of her care was by two ophthalmologists, a general practitioner, three internists, urologists, OB-Gynecologists and also a dermatologist. Her primary care was under the physician (RF) who initially resuscitated her. This case could also be considered a tribute to the nurses, the LPN's, aides, dietitians and her parents who participated in her care.

### Summary

In reviewing this case, one comes to the question of the economics involved and perhaps the moral issues of maintaining life where there is no hope for mental survival of the patient.

This patient survived as a living body only because of intensive, continuing and highly personalized medical care afforded by the hospital staff and acutely concerned parents. We are convinced her survival for this period of time would not have been possible under other circumstances, i.e., domiciliary care or a convalescent home. The cost of such care is astronomical. One can project the cost of 18 years of hospitalization under private or semi-private accommodations on today's cost basis, and a rather unbelievable figure is obtained. One would need to add to this the cost of specialized and personalized care, and in addition, attending physicians' fees.

The morality involves the continuing care of an individual who has no possible recovery from a situation in which there is no function of the higher brain centers. From time to time, the patient's parents would make statements that "She is better today" and infer that indeed some conscious response was being made. However, at no time did the "uninvolved" observer detect such response. We can only conjecture as to the right moral stance to be taken in the care of this type of patient.

The compassionate attitude toward the patient's parents and the acceptance of the standard of "Where there is life, there's hope" were the ruling motives in caring for this individual.

## Commentaries:

### Legal Perspectives

**Joseph M. Healey, J.D.**

Assistant Professor of Community Medicine and Health Care,
University of Connecticut, School of Medicine

Controversies surrounding the withholding or withdrawing of medical treatment are a reflection of the absence of consensus in our society concerning the goals of the doctor-patient relationship, the appropriate use of technology in the health care process, and the role of law in regulating the provision of health care services. The case under discussion involves each of these areas of controversy and, as such, encourages us to develop a framework within which to examine similar cases. Legal justification for withholding or withdrawing medical treatment is present when: (A) treatment is not available; or (B) available treatment is not efficacious; or (C) available efficacious treatment has been refused by an adult person of sound mind or an acknowledged legal representative of a minor or incompetent adult, provided the patient's right to refuse treatment is not outweighed by a compelling state interest.

These justifications are derived from fundamental principles in the Anglo-American legal traditions. One such principle recognizes the importance of self-determination as a fundamental right. Though self-determination is not an absolute right, respecting the self-determination of a patient should always be a critical consideration in determining whether treatment must be provided or may be withheld or withdrawn. A second such principle involves the reasonable limits of a physician's responsibility to provide health care to a patient. By taking into account factors such as the availability and the efficacy of treatment in developing the standard used to evaluate physician's conduct, the Anglo-American *legal* tradition has refused to require that physicians do "everything" "all of the time." By focussing attention on what a reasonable physician would do in the same or similar circumstances, the law acknowledges that there are realistic limits to what physicians should be asked to do.

These justifications and these principles provide a framework within which cases of this nature can be examined. The starting point is the factual context of the case:

(A) what are the diagnosis and prognosis?
(B) is efficacious treatment available?
(C) has the patient or the patient's legally authorized representative given appropriate consent or refused treatment?
(D) are there any factors in the particular case which are relevant to either the selection of treatment or the acceptance and refusal of treatment?

The answers to these questions should enable physicians to clarify their legal responsibilities. In general physicians have a legal obligation to provide efficacious treatment to their patients. Physicians have no legal obligation to provide non-efficacious treatment. Under some circumstances, even efficacious treatment may be withheld or withdrawn, providing the treatment has been properly refused by a competent patient or by a legally recognized proxy. Depending upon the facts of a specific case, the physician's responsibility becomes clearer after such an analysis. Such an analysis should be a regular part of cases of this nature.

---

## The Six-Million-Dollar Woman

**John J. Paris, S.J.**

Associate Professor of Social Ethics at Holy Cross;
Adjunct Associate Professor of Medicine,
University of Massachusetts Medical School

This case is a multiple tragedy: the accident, the parents' denial and delusioned hopes, the abdication of professional responsibility, and the misallocation of societal and medical resources.

The standards under which the physicians functioned for some eighteen years were unrelated to the medical condition of the patient. The first norm, "compassion toward the acutely concerned parents," was a misplaced locus of loyalty. The physicians owed their care to the severely brain-damaged woman. Rather than treat her with the dignity her humanity required, they transformed her into a means of sustaining the parents' false expectations. The second motive, the uncritical acceptance of the standard, "Where there is life, there is hope," was an equally inadequate medical response. The fundamental question is "hope of what"?

Multiple neurological and neurosurgical tests produced a diagnosis of severe irreversible mid-brain damage. When that diagnosis was confirmed, there was "no hope" of recovery. The physicians then had an obligation to inform the parents of that fact and treat the patient accordingly. The appropriate treatment is not merely "a matter of conjecture"; the medical literature is replete with thoughtful analyses of the ethics of patient care. That literature is consistent in its view that there is no moral obligation to treat if the procedures do not offer substantial benefit to the *patient.* Further, as Paul Ramsey made clear in his insightful summary of that tradition, when the treatment offers no hope, its continued employment is not only useless, it is wrong.[1]

The reality of that moral standard was acknowledged in the famous *Saikewicz* opinion when the Massachusetts Supreme Judicial Court, noting developments in medical technology raise anew the question of what constitutes acting in the best interest of the patient, decreed: "We should not use extraordinary means of prolonging life or its semblance when, after careful consideration, consultation, and the application of the most well conceived therapy, it becomes apparent that there is no hope for the recovery of the patient. Recovery should not be defined simply as the ability to remain alive; it should mean life without intolerable suffering."[2]

In a thoughtful examination of the ethical issues involved in the care of a patient in a chronic vegetative condition, the Appellate Division of the New York Supreme Court recently noted: "Increasingly, the medical community has come to recognize and acknowledge that the terminally ill, and particularly those patients in irreversible comas, need care and comfort, not extraordinary life-sustaining therapy."[3] And what is extraordinary therapy? As Ramsey's essay makes clear, it is any treatment, including such ordinary natural remedies as nourishment or antibiotics, which does not offer hope of benefit to the patient. Further—and this is a point which modern society has till now successfully avoided because of third party or government payment—COST has always been a factor in determining the extraordinary nature of treatment.

Field and Romanus concede that eighteen years of intensive highly specialized hospital care is *astronomically* expensive. They even project a cost, but reduce it to the statement: "a rather unbelievable figure." At a low estimate of $300 per day and an inflation rate of 12%, the figure is $6,104,590.

Daniel Callahan courageously raises the issue of the social context of treatment decisions in his "Shattuck Lecture—Contemporary Biomedical Ethics."[4] There he warns against elevating any single moral principle into a position of overriding importance and insists that along with the "patient's right to survive," physicians must also be aware of and responsive to social and communal values. The conclusion of his essay is that treatment issues cannot be left exclusively in the hands of individuals; they must be made against the horizon of macro- and micro-allocation decisions.

Callahan is exactly on target. The question of the treatment of any patient must include an awareness of the cost, the utilization of medical resources, and the limits of tax payers' tolerance for health care expenditures.[5] One way medicine can assume its responsibility in this area is by forcefully reiterating the traditional position that it is ethical, appropriate, and medically indicated that no treatment be provided without a realistic expectation of benefit to the patient. In this case, there was no such expectation.

In the words of Dr. Franz Ingelfinger, for the physician to then "merely spread an array of vendibles in front of the patient (or parents) and say 'go ahead and choose, it is your life', is to be guilty of shirking his duty, if not malpractice."[6] In Inglefinger's assessment, it is the physician, not the parents, who must take responsibility for the terrible but nonetheless true judgment that there is nothing medicine can offer this fatally injured woman. To do otherwise is to betray the patient, deceive the family, unduly burden society, and lessen trust in the profession.

We Should Have Let Her Go.[7]

Felled on the road of life by stroke,
She tarried where she fell.
We fed her, caddied urine, wiped, and waited.
Two toes died first, then half the foot.
We could have let her go;
Instead we cut it off (above the knee).
Her station on the road's unchanged;
We didn't move her back, or off (except her
blackened foot).
I think we thwarted life, which has to end, not
death.
Death's sitting there beside her now.
His pocket holds one foot.
His fingers cool the one that's left.
We should have let her go.

Bernadine Z. Paulshock, M.D.

REFERENCES

1. On (Only) Caring for the Dying; The Patient as Person. Yale, 1977
2. Superintendent of Belchertown State School v. Saikewicz; 370 NE 2d 417, 424, 1977
3. Eichner v. Dillon, 73 AD2d 431, 1980
4. Daniel Callahan: Shattuck-Lecture—Contemporary Biomedical Ethics. NEJournal of Medicine 302:1228-1233, 1980
5. See, Proposition 13 in California and Proposition 2½ in Massachusetts for examples of taxpayers' revolt. Also, see Arnold Relman: The New Medical-Industrial Complex. NE Journal of Medicine 303:963-969, 1980
6. Franz J. Ingelfinger: Arrogance. NE Journal of Medicine 303:1507-1511, 1980
7. Bernadine Z. Paulshock: We Should Have Let Her Go. NE Journal of Medicine, 304:1050, 1981

## The AMA Opinion

Samuel R. Sherman, M.D.

Chairman, Judicial Council,
American Medical Association.

The Herculean efforts to sustain the life of this patient for 18 years represents the highest traditions of the medical profession in this country. They were extraordinary in nature, compassionate in all respects, and entailed astronomical costs. It must be assumed by the readers of the article that the patient's family was cognizant of the irreversible nature of the illness and at the same time desirous of the continuation of extraordinary care hoping for a miracle. The numerous physicians in attendance had no choice but to abide by the parents' decision to maintain life regardless of cost and pessimistic outlook for reversal of coma.

In the event that the family had decided otherwise than reflected in the article, the physicians could have been guided by the standards of care for such cases embodied in the policies and procedures of the hospitals where the patient was treated. Alas, however, there were no pronouncements by the American Medical Association to act as guidelines in such cases until 1973. Since then, they have been reviewed and updated as noted by the following statements:

In December, 1973 the House of Delegates adopted Judicial Council Council Report B(1-73) which contained the following:

3. The Council recommends that the House adopt the following statement to serve as a guideline for physicians:

> The intentional termination of the life of one human being by another—mercy killing—is contrary to the policy of the American Medical Association.
>
> The cessation of the employment of extraordinary means to prolong the life of the body when there is irrefutable evidence that biological death is imminent is the decision of the patient and/or his immediate family. The advice and judgment of the physician should be freely available to the patient and/or his immediate family.

In June, 1977 the House of Delegates adopted Judicial Council Report A(A-77) on Terminal Illness, which contained the following recommendations:

1. The intentional termination of the life of one human being by another—mercy killing or euthanasia—is contrary to public policy, medical tradition, and the most fundamental measures of human value and worth.
2. The cessation of the employment of extraordinary means to prolong the life of the body when there is irrefutable evidence that biological death is imminent is the decision of the patient and/or his

immediate family and/or his lawful representative, acting in the patient's best interest.

3. The advice and judgment of the physician or physicians involved should be readily available to the patient and/or his lawful representative in all such situations.
4. No physician, other licensed health care providers, or hospital should be civilly or criminally liable for taking any action pursuant to these guidelines, nor should there be any criminal or civil penalties of any sort imposed for conduct pursuant to these guidelines.
5. Except as stated above, all matters not in the public domain relating to a patient's terminal illness are the private right of the patient and are protected from public scrutiny by the privacy and confidentiality of the physician-patient relationship.

Finally, the Judicial Council adopted the following opinion on January 10, 1981. It is included as opinion 2.11 in *Current Opinions of the Judicial Council of the American Medical Association.*

> Terminal Illness
>
> The social committment of the physician is to prolong life and relieve suffering. Where the observance of one conflicts with the other, the physician, patient, and/or family of the patient have discretion to resolve the conflict.
>
> For humane reasons, with informed consent a physician may do what is medically necessary to alleviate severe pain, or cease or omit treatment to let a terminally ill patient die, but he should not intentionally cause death. In determining whether it is in the best interest of a terminally ill incompetent patient to administer potentially life-prolonging medical treatment, the physician should consider what the possibility is for extending life under humane and comfortable conditions and what are the wishes and attitudes of the family or those who have responsibility for the custody of the patient.
>
> Where a terminally ill patient's coma is beyond doubt irreversible and there are adequate safeguards to confirm the accuracy of the diagnosis, all means of life support may be discontinued.

The Council believes that these guidelines should apply, as well, to the care of the patient in a permanent "vegetative" state.

## Ethical Viewpoint of a Neurologist

**Ronald E. Cranford, M.D.**
Associate Physician in Neurology,
Hennepin County Medical Center

The authors should be commended for being willing to share the details of this tragic case with us. Unfortunately, many of the important questions are left unanswered. Was serious consideration ever given to terminating treatment in this case? If this was considered, what were the key reasons for deciding to continue therapy? Why was the patient kept in a primary health care facility rather than a nursing home or extended care unit? Who paid for the expenses for this 18-year hospital stay? Did the patient ever express any wishes prior to this accident on how she would have wanted to be treated if she were ever in such a state? It is difficult to comment fully on this case without knowing many more essential details. It would have been helpful, for example, to know more about the thinking and feelings of the medical staff and family throughout this long ordeal.

From the clinical description of the patient and the results of the post-mortem examination, one can make a reasonable presumption that the patient was in a persistent vegetative state—similar to Karen Ann Quinlan and Brother Joseph Fox. There is nothing in this article to suggest that the patient was aware of her condition or surroundings or manifested any voluntary, cognitive interaction with the environment. Patients in a persistent vegetative state have relatively intact brainstem functioning (vegetative functions such as breathing) but no cerebral cortical functioning at all, such as awareness of self or others or any degree of cognition. Thus, this patient did not have the neurologic capacity to experience pain or suffering, an important consideration when decisions were made concerning the level of care given or how to manage a case when the decision had been made to discontinue treatment. From the standpoint of family, who experience a great deal of guilt in these cases, it is crucial for them to know that the patient was not capable of experiencing pain or suffering.

The patient's death in March, 1974, occurred approximately a year before Karen Quinlan developed a similar neurologic syndrome and about 18 months prior to the extensively publicized court proceedings. In view of the widespread public awareness of the plight of Karen Quinlan and her family, and the public discussion regarding her case, one can only speculate how much impact the Quinlan case would have had on the care of this patient.

In cases like this, the physician should do everything possible to help the family cope with the feelings of guilt, inadequacy, sadness, etc. that will inevitably arise. Support for the family and consideration of their emotional turmoil should not deter the physician from being truthful about the patient's condition and the hopeless prognosis. In this case, the prognosis (for recovery of higher cortical functioning) was poor from the onset. By three to six months, certainly by one year, the family should have been informed that the chances for recovery of cognitive functioning were essentially non-existent.

The expenses associated with the care in this case must have been astronomical, as the authors note. This is particularly true since the patient was cared for in a general community hospital. Besides the financial considerations, another scarce resource is the time, energy, and morale of the medical and nursing staff that attended this patient for almost 18 years. Caring for patients in a hopeless condition like the persistent vegetative state can take a heavy toll on hospital staff members involved in their daily care. A serious question arises regarding how these types of situations affect the care of other patients with a better prognosis.

The last paragraph in the article is the most intriguing and the one in which I wished the authors would have gone into greater detail. What exactly does it mean to have a "compassionate attitude toward the patient's parents"? I would hope that this does not mean holding out false hope for the family, instead of being realistic and honest about her condition and prognosis. Since the Quinlan case there has been a significant shift in public and professional sentiment in cases like this. Twenty to thirty years ago, it would have been uncommon to have treatment discontinued, but today families are more realistic in understanding the implications of this neurologic condition and the hopeless prognosis. Also the medical profession is more willing to be honest with the family and lay out the various alternatives and implications of these various courses of action. A compassionate attitude toward the patient's parents would mean that the physicians were honest and caring in their interactions with the parents. This does not necessarily mean that treatment would have been continued or discontinued.

The adage that "where there's life, there's hope" is of course a classic example of biological vitalism, a concept which has been fairly well rejected in the last decade or so. The medical profession and society are coming to grips with the fact that we are indeed making quality of life decisions, however controversial and dangerous these may be.

# Guidelines for Discontinuance of Life-Support Systems

LOS ANGELES COUNTY MEDICAL ASSOCIATION
LOS ANGELES COUNTY BAR ASSOCIATION

A. The general principles which should govern decisionmaking in this area are:
   1. It is the right of a person capable of giving informed consent to make his or her own decision regarding medical care after having been fully informed about the benefits, risks and consequences of available treatment, even when such a decision might foreseeably result in shortening the individual's life.
   2. Persons who are unable to give informed consent have the same rights as do persons who can give such consent. Decisions made on behalf of persons who cannot give their own informed consent should, to the extent possible, be the decisions which those persons would have made for themselves had they been able to do so. Parents (or the guardian) of a minor child, or the conservator of an adult patient, must consent to the decision. Family members of adult patients should always be consulted, although they have no legal standing under present California law to make such decisions on behalf of the patient.

---

*Adopted by the Council of the Los Angeles County Medical Association on March 2, 1981, and by the Board of Trustees of the Los Angeles County Bar Association on March 11, 1981.*

3. A physician may discontinue use of a cardiopulmonary life-support system (i.e. mechanical respirator or ventilator), and is not required to continue its use indefinitely solely because such support was initiated at an earlier time.
4. The dignity of the individual must be preserved and necessary measures to assure comfort be maintained at all times.
5. It is the right of individual physicians to decline to participate in the withdrawal of life-support systems. In exercising this right, however, the physician must take appropriate steps to transfer the care of the patient to another qualified physician.

B. Three sets of circumstances in which decisions to discontinue the use of cardiopulmonary life-support systems can be made without the necessity of prior approval by the courts are:

1. **Brain Death**

   Section 7180 of the California Health and Safety Code states: "A person shall be pronounced dead if it is determined by a physician that the person has suffered a total and irreversible cessation of brain function." This statute also requires that a second physician independently confirm the death and that neither physician be involved in decisions regarding transplantation of organs.

   a. The physicians should document in the medical record the basis for the diagnosis of brain death.
   b. The patient should be pronounced brain dead before disconnecting the respirator or ventilator.
   c. It is desirable to explain the brain death law to family members and other interested persons before this procedure is implemented.

2. **California Natural Death Act**

   Sections 7185 through 7195 of the California Health and Safety Code (the California Natural Death Act) provide that cardiopulmonary life-support systems must be withdrawn from patients who have a signed a "valid and binding" Directive to Physicians. For further information, physicians should consult the Guidelines on the California Natural Death Act adopted by the California Medical Association and the California Hospital Association (CHA). These guidelines are reproduced in the CHA Consent Manual.

3. **Irreversible Coma***

   Cardiopulmonary life-support systems may be discontinued if all of the following conditions are present:

   a. The medical record contains a written diagnosis of irreversible coma, confirmed by a physician who by training or experience is qualified to assist in making such decisions. The medical record must include adequate medical evidence to support the diagnosis;
   b. The medical record indicates that there has been no expressed intention on the part of the patient that life-support systems be initiated or maintained in such circumstances; and
   c. The medical record indicates that the patient's family, or guardian or conservator, concurs in the decision to discontinue such support.

The comfort and dignity of the patient shall be maintained if death does not occur on discontinuation of cardiopulmonary life-support systems.

*While paragraphs B(1) and B(2), dealing with brain death and the California Natural Death Act, are based on provisions of the California Health and Safety Code, this paragraph, dealing with irreversible coma, is not based on any California statute or court decision, but rather reflects our view of good medical practice and the current standard of medical care in Los Angeles County.

*Adopted by the Council of the Los Angeles County Medical Association on March 2, 1981, and by the Board of Trustees of the Los Angeles County Bar Association on March 11, 1981.*

# The Development of the Doctrine of Ordinary and Extraordinary Means of Preserving Life in Catholic Moral Theology Before the Karen Quinlan Case

REV. JAMES J. McCARTNEY, O.S.A., M.S., M.A.

## Introduction

The Karen Quinlan case has resurfaced a discussion of the concepts of ordinary and extraordinary means of preserving life as they have been understood and developed by Catholic theologians over the years. In this study, I would like to outline that understanding and development as they appeared before this celebrated case, so that we can see ethical methodology at work, free from the emotion and personal involvement which often surrounds such a sensitive issue. I will divide my presentation into two parts: 1) Catholic teaching before the papal allocution of Pius XII to physicians and anesthetists on Nov. 24, 1957; and 2) the papal allocution itself and responses of Catholic theologians to it. I will close with a discussion of some of the more pertinent issues as I see them.

## Catholic Teaching Before the Papal Allocution

In an article published in 1958[1] (but written before the papal allocution), Jose Janini presents a very concise history of the development of the concepts of the ordinary and extraordinary means for preserving life, especially as these concepts are applied to surgical operations. He points out that in the 16th century, when the doctrine began to be formed, the development of anesthesia and antisepsis was at such a primitive level as to render almost every surgical operation an excruciating ordeal both subjectively (pain) and objectively (disfigurement).[2] In fact, surgical operations were not infrequently compared with torture chambers.[3]

It was in this context that Soto in 1582 first pointed out that superiors could oblige their subjects under religious obedience to use medicine that could be taken without too much difficulty (*commode*), but that they could not oblige them to undergo excruciating pain because nobody is held to preserve life by such means.[4] It was Banez, however, in 1595, who introduced the terms "ordinary" and "extraordinary" into the discussion of the preservation of life. He points out that while it is reasonable to hold that a human being must conserve his or her life, one is not bound to employ extraordinary means, but only to preserve life by nourishment and clothing common to all, by medicine common to all, and even through some ordinary and common pain or anguish *(dolorem),* but not through any extraordinary or horrible pain or anguish, nor by any undertakings *(sumptos)* extraordinarily disproportionate to one's state in life.[5]

Janini concludes his first section by pointing out that through the 18th century the classical moralists held the following points:

1. One has the obligation to undergo a surgical operation in order to protect one's life, when the pain or anguish *(dolores)* is negligible *(exiguos),* common, and ordinary.
2. Nothing is demanded which would be the occasion for agonizing, horrible, or extraordinary pain or anguish.
3. One is able to oblige by obedience, in spite of extraordinary pain, in some circumstances (he mentions three specific cases of this).
4. Outside of those cases in which one can impose obedience, it is necessary to get the permission of the patient in order to operate, because one is one's own master when it comes to parts *(membrorum)* of one's own body.[6]

---

*FATHER McCARTNEY is assistant program director in the Division of Health and Humanities, Department of Community and Family Medicine in the School of Medicine at Georgetown University.*

Reprinted with permission from *Linacre Quarterly,* Vol. 47, August, 1980, p. 215. 850 Elm Grove Rd., Elm Grove, WI 53122

Janini begins his next section by pointing out that medical science of the 19th and 20th centuries, especially with its discoveries of antisepsis and anesthesia, has profoundly altered the situation in which the classical moralists wrote. He then discusses the approaches of moralists during those years.

In the first place, he points out that Palmieri leaves to others the task of deciding whether a surgical amputation is obligatory or not. Noldin concludes that it is, especially since there now exists the possibility of attaching artificial limbs, and one has the obligation of preserving life even with some bodily defect. Lehmkuhl expressly recognizes that in his time a surgical operation, under the aspect of pain *(dolor),* cannot be considered as an extraordinary means. However, Lehmkuhl makes a distinction between pain and horror, and maintains that one need not be bound to undergo an operation that one views with a great deal of repulsion *(horrorem magnum),* even though there may not be any actual pain involved.[7]

Janini then presents the position of Pruemmer who maintains that any surgical operation which is extremely painful or burdensome, such as the amputation of both arms, should be considered an extraordinary means. he also mentions Merkelbach who introduces a utilitarian calculus. He concludes this section by mentioning the opinion of Bender that to undergo a surgical operation of sufficient gravity that it would be considered an extraordinary means by moralists is not strictly obligatory to save one's life or regain one's bodily health as long as one's own life does not carry with it a relevant familial or social concern.[8]

In the final section Janini concludes that in the light of present surgical techniques, modern surgery must always be considered an ordinary means, at least as this term was understood by the classical moralists. However, he maintains that one must always consider other relevant circumstances (e.g., horror, uncertainty of success, etc.) as well as other virtues that may be involved (piety, charity), before one can pass a moral judgment on any given case.[9]

A much more thorough history and analysis of the doctrine of ordinary and extraordinary means was also published in 1958 by Daniel A. Cronin (this work was also written before the papal allocution, however).[10] Some of Cronin's more significant conclusions are the following:

1. All are obliged to preserve their lives unless a moral impossibility would excuse (any means involving a moral impossibility are extraordinary means).
2. There is a distinction between natural (those *per se* intended by nature) and artificial (those whereby man can *supplement* nature) means of conserving life. Both, however, can be ordinary means.
3. "Ordinary means of conserving life" and "ordinary medical procedures" must be distinguished. What is an ordinary medical procedure may not be an ordinary means of conserving life in the theological sense.
4. A relative norm suffices for determining ordinary and extraordinary means. (There is no absolute norm.)[11]

Before presenting Cronin's definitions of ordinary and extraordinary means and how these should be employed, it would be helpful to point out that Cronin includes in his analysis the original work of the American moralist Gerald Kelly, S.J. In an article in *Theological Studies* written in 1950,[12] Kelly discusses the duty of using artificial means of preserving life and comes to the conclusion that "even ordinary artificial means are not obligatory when relatively useless."[13] In a later article,[14] he modifies this position by considering the concept of uselessness as indicative of extraordinary means.[15]

Cronin, following Kelly, gives the following definitions:

> *Ordinary means of conserving life* may be defined as those means commonly used in given circumstances, which this individual in his present physical, psychological, and economic condition can reasonably employ with definite hope of proportionate benefit.
>
> *Extraordinary means of conserving life* may be defined as those means not commonly used in given circumstances, or those means in common use which this individual in his present physical, psychological, and economic condition cannot reasonably employ, or, if he can, will not give him definite hope of proportionate benefit.[16]

He then points out that while ordinary means as defined are always morally obligatory, extraordinary means are not *per se* but only *per accidens,* i.e., a particular individual may be bound in some extenuating circumstances (e.g., for the common good) to employ such means.[17]

In closing this section I should like to present three final points. The first is mentioned by Joseph V. Sullivan[18] and the last two by Gerald Kelly. Sullivan points out that ordinary and extraordinary means are relative also to the patient's physical condition. Thus, "a natural means of prolonging life is, *per se,* an ordinary means of prolonging life, yet *per accidens,* it may be extraordinary," and "an artificial means of prolonging life may be an ordinary means or an extraordinary means relative to the physical condition of the patient."[19]

Kelly mentions two other aspects worthy of note. First, he introduces the principle of totality into the discussion and maintains that perhaps we should consider the patient's total condition before we decide whether a given means is ordinary or extraordinary. Thus, for example, he sees the possibility of a diabetic with terminal cancer not taking insulin as perhaps an extraordinary means.[20] He also emphasizes that we must consider the rights and duties of relatives and physicians when evaluating whether a given means of conserving life is ordinary or extraordinary. This idea, presented in rudimentary form by Kelly,[21] is clearly explicated by Pope Pius XII as we shall soon see.

### The Allocution of Pope Pius XII to Physicians and Anesthesiologists and the Response of Catholic Moral Theologians

On Nov. 24, 1957, addressing an international congress of physicians and anesthesiologists, Pius XII explicated the papal magisterial teaching with regard to the prolongation of life. Following Huftier,[22] the teaching can be broken down into the principle and its application.

Principle:

> Natural reason and Christian morals say that man (and whoever is entrusted with taking care of his fellowman) has the right and the duty in case of serious illness to take the necessary treatment for the preservation of life and health. This duty that one has toward himself, toward God, toward the human community, and in most cases toward certain determined persons, derives from well-ordered charity, from submission to the Creator, from social justice and even from strict justice, as well as from devotion toward one's family.
>
> But normally one is held to use only ordinary means—according to the circumstances of persons, places, times, and culture—that is to say, means that do not involve any grave burden *(aucune charge extraordinaire)* for oneself or another. A more strict obligation would be too burdensome *(trop lourde)* for most men and would render the attainment of the higher, more important good too difficult. Life, health, all temporal activities are in fact subordinated to spiritual ends. On the other hand, one is not forbidden to take more than the strictly necessary steps to preserve life and health, as long as he does not fail in some more serious duty."

Application:

> The rights and duties of the doctor are correlative to those of the patient. The doctor, in fact, has no separate or independent right where the patient is concerned. In general he can take action only if the patient explicitly or implicitly, directly or indirectly, gives him permission. The technique of resuscitation which concerns us here does not contain anything immoral in itself. Therefore the patient, if he were capable of making a personal decision, could lawfully use it and, consequently, give the doctor permission to use it. On the other hand, since these forms of treatment go beyond the ordinary means to which one is bound, it cannot be held that there is an obligation to use them nor, consequently, that one is bound to give the doctor permission to use them.
>
> The rights and duties of the family depend in general upon the presumed will of the unconscious patient if he is of age and *"sui juris."* Where the proper and independent duty of the family is concerned, they are usually bound only to the use of ordinary means.
>
> Consequently, if it appears that the attempt at resuscitation constitutes in reality such a burden *(une telle charge)* for the family that one cannot in all conscience impose it upon them, they can lawfully insist that the doctor should discontinue these attempts, and the doctor can lawfully comply. There is not involved here a case of the direct disposal of the life of the patient, nor of euthanasia in any way; this would never be licit. Even when it causes the arrest of circulation, the interruption of attempts at resuscitation is never more than an indirect cause of the cessation of life, and one must apply in this case the principle of double effect and of *"voluntarium in causa."*[23]

One of the first theologians to respond to this teaching was Eugene Tesson. In a brief article in *Etudes*,[24] he outlines the papal teaching, emphasizes the importance this decree gives to families of an unconscious patient, and concludes by showing the value of casuistry in determining what treatment should or should not be accorded in given situations and circumstances. In a much longer article by Michel Riquet in *Cahiers Laënnec*,[25] the papal teaching and its implications are thoroughly analyzed. The author especially emphasizes the importance of the principle of totality (extended to the psychological and spiritual dimensions of the whole person) and shows how this principle can enter the calculus of determination of extraordinary and ordinary means.[26] He also shows the importance of consequences as implied by this doctrine, emphasizing that if one would consider oneself a grave burden to oneself or to others by undergoing a surgical or medical procedure, one would not be obliged to undergo it.[27] He concludes by stressing the complexity of most medical-moral decisions, and points out how many different factors have to be considered before a really informed and prudent judgment can be made in any given case.[28]

Marc Oraison discusses the papal decree in a different context, that of the allocation of scarce lifegiving resources, in an article written in 1963.[29] He raises the question whether, in a hospital equipped with six artificial respiration units all being used—some by persons in deep coma—a person with polio who needed one of these machines to stay alive would have more of a right to its use than would someone in deep coma who was already using it. He maintains that the Pope would affirm that the person who has the greatest hope of survival is entitled to the machinery, and that there is no moral difference between not using extraordinary means in the first place and ceasing their use once treatment has begun.[30]

D. F. O'Callaghan, responding to a letter in the *Irish Ecclesiastical Record*,[31] points out that it is much more difficult to differentiate between euthanasia and the cessation of extraordinary means than the papal teaching seems to indicate, at least for the ordinary Christian. Thus the problem of scandal must be dealt with. The author feels that the best way to do this is to have public policy guidelines such as have been issued in some homes for the incurably ill.[32] In general, this article is much more conservative in tone than any other considered thus far.

In the journal *Ami du Clergé*, M. Huftier discusses the papal teaching in two different articles.[33] The latter article deals with the whole papal allocution and merely paraphrases and explains it. The first article, however, deals specifically with the ordinary and extraordinary means of preserving life and the author uses the papal document to support his own view. He contends that extraordinary means may be understood thus: A significant mutilation (whose significance comes from the extent or the function of the organ removed), or a serious surgical operation involving great expense or some danger, or some treatment demanding the use of a battery of complex techniques or the maintenance of extensive care.[34] He concludes the article by emphasizing that two points must not be forgotten:

1. If someone doesn't have exact foreknowledge with mathematical certainty what will be the outcome, he should allow an experienced doctor to make the judgment. The doctor will at least have the technical expertise needed to make such a judgment.
2. It is not forbidden to do more than that which is strictly necessary to conserve life and health, as long as one does not fail in some more serious duty.[35]

Aidan M. Carr discusses the topic in response to a question in the November, 1973 issue of the *Homiletic and Pastoral Review*.[36] While he does not directly quote the papal teaching, he uses the very words of the Pope in formulating his reply. He also includes a very interesting analysis provided him by the Catholic moralist Thomas J. O'Donnell. With regard to the prolongation of life in terminal illness, O'Donnell states:

> 1. First, there is the means in itself—the extraordinary sophistication of the means, the cost in money, in pain, in emotional stress, etc., in using them.
> 2. Second, there is the idea of therapy as something that cures or at least relieves. When a procedure ceases to do this, it ceases to be therapy.
> 3. Third, and particularly in view of the advances in modern techniques, there's the impossibility of putting "extraordinary means" on one shelf and "ordinary" on another. Rather, it seems to me, we must speak of *relatively* ordinary or *relatively* extraordinary, i.e., *relative* to what is left of the usable context of human living for this patient; *relative* to what the specific means in question can accomplish; *relative* to the attitude and condition of the particular patient.[37]

A final reference should be made to the very thorough treatment of the issue found in Charles J. McFadden's sixth edition of his book, *Medical Ethics*.[38] (This approach is presented substantially unchanged in the author's latest book, *The Dignity of Life*.[39]) While the author does not directly include the papal teaching in either book, his presentation is consonant with it, and its significance lies in the fact that it provides clear-cut examples for almost every type of situation which can be conceived in the light of the traditional teaching. He also makes reference to other articles on the subject which have not been included here.

## Discussion

As was mentioned earlier, the Karen Quinlan case has stimulated a renewed discussion of the issue of ordinary versus extraordinary means of preserving life. It has been my intention in this paper to show the evolution of this teaching in Catholic moral theology up to early 1974 when the Quinlan case began to exert its influence upon ethicists and theologians of the present time. In this final section, I would like to raise some points of discussion based upon the presentation in the previous two sections.

In the first place, it was pointed out that Cronin makes a distinction between natural and artificial means and shows that both can be considered ordinary in some circumstances. Sullivan then claims that even *natural* means can be considered extraordinary since means are always to be considered relative to a patient's physical condition. This seems to indicate that providing adequate nutrition and protection from infection need not be absolutely necessary if the patient's physical condition doesn't warrant it. I believe that even the papal teaching is ambiguous on this point, for while it stresses on the one hand that one must always take the necessary measures to preserve life and health (indicating that natural means are always considered ordinary), it also states that one is not obliged to make oneself a burden to oneself or to others (indicating a much greater relativity of determining means).

Secondly, it would seem that neither the European theologians nor the Pope himself adopt Kelly's utilitarian proviso that means used "without reasonable hope of success" are to be considered extraordinary. This pragmatic approach, while not contradicted by anyone, seems to be totally ignored by almost all the European authors, with the exception of Oraison, who does not explicitly state the principle but uses it implicitly in the case he presents, and feels that this approach is consonant with the papal teaching. American and Irish moralists, however, are comfortable with this approach both before and after the papal teaching which would indicate that they feel that the Pope had not, in fact, rejected it. The question I would raise, tying this point to the previous one, is this: Could one ever in the case of terminal illness, even though someone were not a grave burden, discontinue feeding him because there was not a "reasonable hope of success" if he were fed normally? While most would consider this to be active euthanasia, it would seem possible to accept it within traditional Catholic thought, i.e., if natural means can sometimes be extraordinary, and extraordinary means are determined at times by usefulness, why not discontinue natural means if they are useless?

The third and final point is that raised by O'Callaghan who pointed out that it is hard at times to distinguish between euthanasia and the withdrawal of extraordinary means. This is especially true today when many times passive euthanasia is defined as the withdrawal of exotic life support systems for a given patient. It seems that because of the emotional overtones connected with the word, Church leaders are afraid to admit that Catholic moral theology has always allowed "passive euthanasia" as it is defined today, and are thus unsupportive of legislation allowing precisely this in certain parts of the United States at the present time. It would be helpful to reflect upon the teaching of Catholic moral theology in this regard before pastoral letters are written which confuse people as much as they direct and guide them.

Hopefully this presentation has brought into clearer focus some of the issues involved in the means used for the prolonging of human life today. While we must not become slaves to the past, we must understand former approaches if we are to formulate teaching that is in harmony with our tradition, yet responsive to the needs and problems of our times.

## REFERENCES

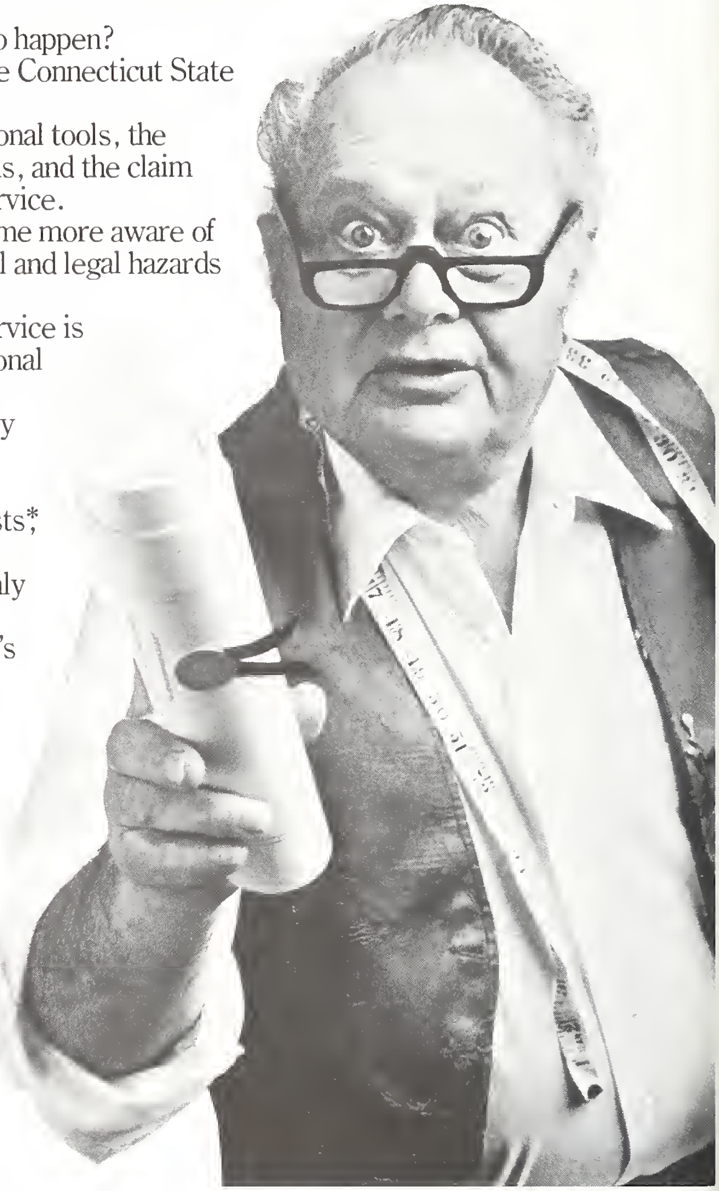
1. Janini, Jose, "La operatión quirúrgica, remedio ordinario," *Revista Espanola de Teologia*, 18 (1958), pp. 331-348
2. *Ibid*, p. 332
3. *Ibid*, pp. 332-333
4. *Ibid*, p. 333
5. *Ibid*, pp. 335-336
6. *Ibid*, p. 338
7. *Ibid*, pp. 340-341
8. *Ibid*, p. 342
9. *Ibid*, pp. 346-347
10. Cronin, Daniel A., *The Moral Law in Regard to the Ordinary and Extraordinary Means of Conserving Life* (Rome: Typis Pontificiae Universitatis Gregorianiae, 1958)
11. *Ibid*, pp. 160-161
12. Kelly, Gerald, "The Duty of Using Artificial Means of Preserving Life," *Theological Studies*, 11 (1950), pp. 203-220
13. *Ibid*, p. 220
14. Kelly, Gerald, "The Duty to Preserve Life, *Theological Studies*, 12 (1951), pp. 550-556
15. *Ibid*, p. 550
16. Cronin, *op. cit*, p. 161
17. *Ibid*, pp. 161-163
18. Sullivan, Joseph V., *Catholic Teaching on the Morality of Euthanasia* (Washington: The Catholic University of America Press, 1949)
19. *Ibid*, p. 65
20. "The Duty of Using Artificial Means of Preserving Life," *op. cit.*, pp. 215-216; cf. Canon McCarthy's article in the *Irish Ecclesiastical Record*, 58 (1941), pp. 552-554
21. *Ibid*, pp. 216-217
22. Huftier, M. "Usage de Soins Extraordinaires," *Ami du Clergé* 75 (1966), pp. 455-456
23. Pius XII, Pope, Allocution "Le Dr. Bruno Haid," Nov. 24, 1957, *Acta Apostolicae Sedis* 49 (1957), pp. 1031-1032
24. Tesson, E., "Réanimation et Casuistique," *Études*, 296 (1958), pp. 96-98
25. Riquet, Michel, "Réflexion Morale," *Cahiers Laënnec*, 22 (1962), pp. 66-72
26. *Ibid*, pp. 68-69
27. *Ibid*, pp. 71-72
28. *Ibid*, p. 72
29. Oraison, Marc, "Euthanasie et Mystére de l'Homme," *Cahiers Laënnec*, 23 (1963), pp. 5-19
30. *Ibid*, pp. 17, 18
31. O'Callaghan, D.F., "Duty to Prolong Life in the Hopeless Case," *Irish Ecclesiastical Record*, 103 (1964), pp. 330-336
32. *Ibid*, p. 336
33. Huftier, "Usage de Soins Extraordinaires," *op. cit.;* and "Prolongation de la Vie," *Ami du Clergé*, 77 (1968), pp. 117-121
34. "Usage de Soins Extraordinaires," *op. cit.*, p. 456
35. *Loc. cit.*
36. Carr, Aidan M., "Is This Euthanasia?," *Homiletic and Pastoral Review*, 74 (2) (1973), pp. 70-73
37. *Ibid*, p. 72
38. McFadden, Charles J., *Medical Ethics*, (Philadelphia: F.A. Davis Co., 1967), pp. 241-261
39. McFadden, Charles J., *The Dignity of Life* (Huntington: Our Sunday Visitor, 1976), pp. 146-173
40. *Medical Ethics*, *op. cit.*, p. 242

---

Do not rashly use every new product of which the peripatetic siren sings. Consider what surprising reactions may occur in the laboratory from the careless mixing of unknown substances. Be as considerate of your patient and yourself as you are of the test-tube.

—Sir William Osler

# "Your suit is ready, doctor," said the tailor.



Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs,* 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.

Ætna
LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company

# Discontinuing Treatment for the Terminally Ill: Ethical Considerations

MINDY G. WOLMAN

Questions concerning the treatment of terminally ill patients are becoming both more prevalent and more complex; advances in medical technology have provided more treatment alternatives and a greater ability to extend life. One effect of these advances has been increased attention being focused on the treatment of dying patients. Some of the resulting literature has been specifically concerned with the profound ethical dilemmas that arise when a physician considers stopping aggressive therapy (surgery, chemotherapy, radiation therapy, etc.) or discontinuing life-supporting technology for terminally ill patients.

In a recent article, Dr. Ned Cassem examines some of the more practical aspects of these dilemmas.[1] Cassem outlines the ethical principles that can serve as guides in clinical decision-making concerning treatment in the end stages of terminal disease. He also notes several of the important factors to be attended to in such decisions.

Cassem points out that "clinical judgements are thoroughly practical and must remain so." The ethical principles he presents are intended to be used as guides to supplement the facts in individual cases. Such guides are particularly important when the discontinuation or limiting of life-supporting treatment is being considered.

The principles Cassem proposes are as follows:

1. Life is not the absolute or ultimate good nor death the absolute evil.
2. Clinical decisions to stop "heroics" apply only to patients who are irreversibly moribund.
3. The will of the patient, not the health of the patient, should be the supreme law.
4. Treatments that cannot reverse an illness in a moribund patient are not necessary (they may be justifiable, but not necessary), and, when they will cause more suffering than benefit, are contraindicated.
5. Stopping treatment is ethically no different from never starting it.

In backing up his first principle, Cassem cites the primary principles of traditional medical ethics: "do no harm" and "restore health and relieve suffering." It is evident that prolonging life at any cost is not consistent with these basic goals of medicine. This leads to Cassem's conclusion that "life is not the absolute or ultimate good not death the absolute evil." Obvious conflicts can arise here when considering the case of the irreversibly terminally ill patient. At what point does therapy cause more suffering than it is worth? Cassem points out that "the physician's most agonizing task is that of deciding when efforts to save the patient will not only fail but will result in more rather than less suffering for the patient." This is also related to his fourth principle.

Concerning his second principle, Cassem uses the Swiss Academy of Medical Sciences' definition of irreversibly moribund: "progressing inevitably in a short time to death."[2] This principle can be useful in avoiding the "slippery slope"[3] rebuttals that are bound to arise when discussing the cessation of aggressive therapy and life-support mechanisms. However, its necessity as a principle here is questionable because Cassem is concerned, in his article, only with patients in the final stages of terminal disease. Therefore, presenting it as a principle is redundant.

After stating his third principle, Cassem proceeds to qualify it. Some qualifications are indeed necessary when one is proposing a rule stating that the will of the patient should be the supreme law. Without qualifications, such a rule could get quite out of hand. Cassem points out four hypothetical situations in which the will of the patient may be over-ridden (albeit temporarily, pending court decision). If a patient is suffering from tremendous amounts of pain and wants to die solely to end the pain, the pain should be treated in such a manner (if at all possible) that the person can make his decision under relatively pain-free conditions. Should

---

MINDY G. WOLMAN, Research Assistant, Institute of Society, Ethics and the Life Sciences (The Hastings Center) Hastings-on-Hudson, N.Y.

a patient be depressed, attempts should be made to treat the depression. Hopefully, the patient will be able to reconsider his decision once the depression has been alleviated. If the depression cannot be alleviated, it should at least be determined that the patient is able to think clearly and that the patient has had the opportunity to consider all options.

When a patient's competency is questionable, psychiatric consultation is recommended. Finally, one must consider the emergency situation, in which discussion time may prove lethal. In such situations, the physician must make the decision (particularly when the patient is unconscious), doing what he feels is in the best interests of the patient.

The third principle also comes into play when dealing with the family of an incompetent patient. The physician should ask not what the family prefers, but what they think the patient would want done under the circumstances.

Generally, treatments that return a patient to health (or to a healthier state) are considered necessary. However, when the outcome of the treatment is highly questionable, its necessity also becomes questionable. This is particularly the case when it comes to patients in the end stages of terminal disease. Cassem's fourth principle is of value here because it points out that treatments that cannot reverse an illness and will cause only more suffering are contraindicated. Of course, this still leaves one with the problem of determining when this stage of an illness is reached. There is no definitive point in the progress of a disease at which treatment becomes contraindicated. Concerning this principle, Cassem states:

> Though the principle is simply stated, the clinical judgements about outcome it assumes often seem impossible to make . . . Abstract principles cannot solve clinical dilemmas. Rather, they serve as points about which relevant clinical judgements become more sharply focused: Will suffering more likely outweigh benefit? Does one condition . . . so overshadow another . . . that the benefits of treatment . . . are negated?

Cassem's fifth principle (stopping treatment is ethically no different from never starting it) may sound a bit extreme at first, but it is actually a valid statement. It should be obvious that the psychological ramifications of stopping life-prolonging treatment are quite different than the ramifications of never starting such treatment. As Cassem points out, it seems to be one thing for a physician not to put a comatose patient on a respirator when it has been determined that the patient will never regain consciousness. It appears to be an entirely different story when a month after placing a patient on a respirator it becomes clear that the patient will never regain consciousness. The removal of the respirator in the second case will most likely be followed by the death of the patient. Psychologically the "blame" for the death of the patient seems more clear in the second case, yet there is no moral difference between the two; Daniel Callahan has pointed out that the same ethical principles apply to both of these cases.[4]

The focus of this summary has been the ethical guidelines for decision-making that Cassem presented in his article. It should be added that in his article, Cassem follows his ethical analysis with specific suggestions for a decision-making protocol. The protocol he proposes was the result of six years of the experience of the Optimum Care Committee at Massachusetts General Hospital.

## REFERENCES

1. Cassem, Ned: When illness is judged irreversible: Imperative and elective treatments. Man and Medicine 5 (3): 154-166, 1980
2. Swiss Academy of Medical Sciences: Guidelines concerning assistance to the dying (euthanasia). Swiss Med Wschr 108: 1169-1171, 1978
3. A "slippery slope" rebuttal to an argument is the persistent stretching of the argument to the point where its validity is obviously questionable (for instance, when the ethical support of abortion is "stretched" or extended to be the ethical support of infanticide).
4. Daniel Callahan, personal communication, June 3, 1981

# Reforming the State Hospital Commission

DENNIS P. MAY

During the past few months, a great deal of comment has appeared in the press concerning the changes which the General Assembly made this year in the structure and procedures of the Connecticut Commission on Hospitals and Health Care, the state's chief hospital regulatory agency. Much of this comment has been critical and, while some criticism was to be expected, especially from Commission members whose jobs were eliminated by the changes, it is also true that some comments also came from persons such as newspaper editorialists, whose sole concern was whether the changes would indeed weaken the Commission's effectiveness in controlling costs, as was charged.

Is such concern justified? Do the reforms which the Assembly made truly "gut" the Commission, as some critics contend. The simple answer to both these questions is "no". By making changes in the Commission's structure and procedures, the State Legislature was not attempting to strip the Commission of its authority, but rather to simplify and streamline the manner in which that authority was exercised. At the same time, it was hoped that the Commission's strong influence over rising health care costs could be maintained; indeed, that it could be made stronger still by the elimination of many of the sources of past Commission-hospital conflict.

Created in 1973, the Commission seeks to control health-care cost inflation in two ways. First of all, it has the authority to require all of the state's 35 general hospitals to submit their proposed operating and capital budgets to it annually for review and approval. It also has the authority to cut these proposed budgets severely whenever it believes the increases sought are not justified.

These cuts in the past have led to a whole host of lawsuits involving the Commission and various hospitals. In every instance in which a hospital sued over a cut, these suits were settled either in or out of court to the satisfaction of the hospital involved. The only exception are three matters which are still pending.

Beyond its budget review authority, the Commission also has the power to deny any hospital request for permission to purchase new equipment, inaugurate a new service or expand or renovate its facilities. Here too, the Commission has gotten itself in a great deal of legal difficulty, especially with its denial of purchases of sophisticated radiological equipment which hospitals claimed their patients needed.

Supporters of the Commission have claimed that it has been extraordinarily successful in its work, saving state taxpayers $300 million in health care costs since 1976 alone.

Hospital officials counter, however, that whatever savings have been generated (and they seriously question the Commission's $300 million claim) have been achieved only at the expense of the hospitals' financial health. They note, for example, that while only 17 of the state's 35 general hospitals experienced operating deficits in 1977, by 1981 that number had jumped to 28.

In addition, hospital officials note, there has been the impact which the Commission has had on hospital patient care—the new programs that have had to be postponed, the needed equipment which could not be purchased, the nursing and other staff who could not be hired, due to Commission restrictions.

This was the environment in which the General Assembly made the changes it did last spring. What exactly were those changes? Essentially, there were two, with the first one involving a reduction in the Commission's size from a 17-member part-time body to a three-member full-time unit.

The change in the Commission's size was prompted not by a suggestion from hospitals but rather by an

---

DENNIS P. MAY is the president of The Connecticut Hospital Association, a not-for-profit corporation composed of 106 institutional members, including all 36 of the state's general hospitals. A graduate of Boston College, Mr. May holds a master's of public health degree from Yale University and has published numerous articles on financing and cost containment in the health care sector.

observation made by one of the General Assembly's own subunits, its Program Review and Investigations Committee.

Charged under the state's "Sunset" law, with investigating on a periodic basis the successes and failures of all state agencies, the committee in its report on the Commission issued early this year noted that within the then part-time Commission, there existed a strong tendency for the 17 Commissioners to follow the lead of their full-time staff with regard to regulatory decisions.

Of 111 panel and staff reports reviewed by the Commission in the first part of 1980, for example, the committee noted, the Commission disagreed with the staff's conclusion only twice.

Such a deference to staff expertise is not unusual in an organization where part-time officials are served by full-time staff. By changing the Commission from a part-time body to a full-time one, however, it was the lawmakers' hope to eliminate this imbalance and thus improve the Commission's overall effectiveness.

Given the fact that the chairman of the new full-time Commission, F. Bernard Forand, is the staff director from the former Commission, one can legitimately question whether it is likely this goal will be achieved. Beyond that, however, it is difficult to see how anyone could interpret this change as leading to a "weakening" of the Commission.

The second change which the General Assembly made will, beginning in 1982, affect the way the Commission initially evaluates the 35 hospital budgets which it reviews annually.

Currently, the Commission primarily uses a series of six complex "screens" to carry out this initial evaluation, four of which look at a hospital's proposed increases in net revenue, net expenses, price and volume. The fifth and sixth are "catch all" screens which allow the Commission to review a hospital's budget even if it passes the first four tests. Taken together, the Commission calls this series of screens its "Overall Reasonableness Test" or ORT. If a hospital's budget is able to meet the criteria of these screens, it is automatically approved and thus exempt from further detailed review.

"Easier said than done," is the way most hospital administrators would probably describe the likelihood of meeting the screens' criteria.

In the past, for example, the Commission has been strongly criticized for consistently incorporating extremely unrealistic inflation predictions within the structure of its screens. Last year, for example, the Commission used a prediction of 8.9 percent, which later proved to be far below the true inflation level for hospitals or, for that matter, for any other sector.

Beyond problems with inflation predictions, the screens also have been criticized for being so complex and subject to last-minute modifications by the Commission that hospital financial officials often literally do not know whether their budgets have passed until the Commission itself tells them.

To replace this hodgepodge of inscrutable screens and arbitrary formulas, the General Assembly approved the establishment of a one-test system, based on a hospital's expenses per equivalent admission. The new system is to take effect in 1982.

If a hospital could show that its expenses were no more than two percent above the national level as determined by the federal government, the test stated, then that hospital would be exempt from further costly and time-consuming review without having to undergo any further tests.

While admitting that no evidence exists to back up their claims, critics of the new test nevertheless have charged that too many hospitals will escape review next year under the new screen. According to the Connecticut Hospital Association's analysis, however, that outcome is highly unlikely.

The CHA analysis shows, for example, that, had the new screen been in effect this year, as many as 23 hospitals would still have had to undergo detailed review. This compares quite favorably to the 26 which actually underwent such review, using the current ORT system. Once again, the evidence hardly supports the charge that the new test "guts" the Commission of most of its powers.

In making the changes it did in the hospital cost commission, the General Assembly sought neither to encourage the overregulation of hospitals nor the deregulation. It sought rather to find a middle ground in which effective cost containment could be continued without any threat to the quality of hospital care. Only time will tell whether the changes which the Assembly made will achieve this goal. Unlike the Assembly's critics, however, it is the belief of most hospital officials that they at least ought to be given a chance.

# CEA as a Cancer Marker

## SPONSORED BY THE NATIONAL CANCER INSTITUTE

Assisted by the Office for Medical Applications of Research, Office of the Director, NIH

The National Institutes of Health consensus development program brings together biomedical research scientists, practicing physicians, consumers, and others as appropriate, in an effort to reach general agreement on the safety and efficacy of a medical technology. That technology may be a drug, device, or medical or surgical procedure.

Following consensus meetings, summaries of conclusions and recommendations issued by consensus panels are widely distributed to the research, practicing, and lay communities. All shades of opinion are reflected in those summaries.

At NIH, the Office for Medical Applications of Research (OMAR) is responsible for coordination of the consensus development program. OMAR assists the individual NIH institutes, which sponsor the conferences, in this effort.

A Consensus Development Conference was held at the National Institutes of Health September 29 - October 1, 1980, to address issues concerning the role of the carcinoembryonic antigen (CEA) as a marker in the management of cancer.

At NIH, Consensus Development Conferences bring together biomedical research scientists, practicing physicians, consumers, and others with special interest or knowledge, in an effort to reach general agreement on the scientific evaluation of a medical technology. That technology may be a drug, device, or laboratory, medical, or surgical procedure.

For this Consensus Conference, the members of the Panel were limited to biomedical and clinical investigators actively working in the field, clinically involved in patient care, and familiar with the technology under assessment. The Panel met following formal presentations and discussions to assess the issues based on the evidence presented. This summary is the result of the Panel's deliberations.

### Introduction

Human neoplasms may produce and release into the circulation a variety of substances collectively referred to as *tumor markers.* The oncofetal antigens comprise one particular group of markers, of which the carcinoembryonic antigen (CEA) has been the most widely studied.

CEA is a glycoprotein of about 200,000 molecular size. It is expressed in significant amounts during embryonic life, especially by the large intestine, and postnatally by carcinomas arising from this site. CEA can be released by these tumors into the circulation to cause raised levels which may be measured by sensitive radioimmunoassay and related techniques. Such methods have, however, demonstrated that small amounts of CEA are also present in the normal adult large intestine and in the circulation of healthy subjects.

Subsequent investigations have revealed that many epithelial-derived tumors at other sites may also express CEA and be associated with elevated circulating blood levels. Thus, it may be that the assay of plasma CEA has protean applications in oncology.

The Consensus Development Panel and members of the audience considered evidence to address the following questions:

1. Should CEA be used in cancer screening?
2. Is CEA helpful in cancer diagnosis?
3. What does CEA tell about the extent and outcome of cancer?
4. Is CEA helpful in monitoring cancer treatment?

### Plasma CEA Levels in Health and Disease

Using the presently available radioimmunoassay,

---

NIH Consensus Development Conference Summary Vol. 3, No. 7

EDITOR'S NOTE: For further information about the "NIH Consensus Development Conference Summaries," contact the Office for Medical Applications of Research, Building 1, Room 216, National Institutes of Health, Bethesda, Maryland 20205.

2.5 ng/ml is stated to be the upper limit of normal for plasma CEA levels. Values in excess of 2.5 ng/ml may be found in association with cancers, in particular those of the gastrointestinal tract, pancreas, ovary, lung, and breast. Similarly raised CEA levels may, however, be detected in cigarette smokers, in patients with benign neoplasms, and in 15 to 20 percent of subjects with inflammatory disorders such as ulcerative colitis, Crohn's disease, pancreatitis, liver disease, and pulmonary infections. Thus, raised plasma CEA values are not specific for cancer, although very high levels (for example, above 20 ng/ml) are highly suggestive of malignancy. It is important that serial assays of CEA be used in reaching a clinical judgment, and not any single determination. The panel believes that each laboratory performing CEA assays should establish its own "normal" range. The recommended upper level of "normal" (2.5 ng/ml) in the population requires additional evaluation. Values cited in this document are based on the only radioimmunoassay commercially available at the time of the conference, the Hoffman-La Roche assay. Other assay systems may give different results.

## Conclusions and Recommendations

After listening to and discussing the evidence, the Panel reached the following conclusions:

### 1. Should CEA be used in Cancer Screening?

As indicated above, studies to date have revealed a major overlap in the distribution of plasma CEA values in subjects with inflammatory diseases and benign and malignant tumors of the gastrointestinal tract and of other sites, including breast, bronchus, urothelium, ovary, uterus, and cervix. Therefore, the plasma CEA assay does not possess the sensitivity (true-positive rate) or the specificity (true-negative rate) required to discriminate between localized malignant tumors and benign disorders.

Consequently, these data, together with the fact that raised CEA levels occur in smokers, vitiate the use of plasma CEA assays in the screening of an asymptomatic population to detect neoplastic disease. The use of CEA to assist with the surveillance of so-called high-risk groups, in whom CEA-producing tumors may develop, remains to be established.

### 2. Is CEA Helpful in Cancer Diagnosis?

Few prospective studies have been effected with the aim of determining whether the availability to clinicians of a plasma CEA result would help in confirming a suspected malignancy in symptomatic patients. In addition, the caveats with respect to cancer specificity which limit the CEA test's applicability for screening (namely, that raised levels occur with smoking, non-neoplastic diseases, and benign tumors) are also pertinent with respect to assisting in reaching a diagnosis in a symptomatic population.

Therefore, we cannot recommend, based on the presently available data, that CEA be used independently to establish a diagnosis of cancer. However, in a patient with symptoms, a grossly elevated value, greater than 5-10 times the upper limit of the reference normal range for that particular laboratory, should be considered strongly suggestive for the presence of cancer in that particular patient. In this situation further diagnostic efforts to establish the presence or absence of cancer are indicated.

### 3. What Does CEA Tell About the Extent and Outcome of Cancer?

Many workers have shown that preoperative plasma CEA levels correlate with the clinical stage of disease in several tumor types. Patients with colorectal or, possibly, bronchial carcinomas whose preoperative CEA levels are at the lower end of the spectrum have better survival rates than patients whose levels are in excess of 10 ng/ml.

It should be remembered, moreover, that the correlation between increasing plasma CEA levels and progressive cancer is not always perfect and that a normal CEA cannot be taken as evidence of localized disease or remission. About 15 to 20 percent of patients with proved malignancies never have elevated plasma levels. Such false negatives may be related to the degree of tumor differentiation. Poorly differentiated colorectal carcinomas, for example, tend to be associated with a reduced proclivity for CEA expression and release.

On the basis of the available data, we recommend that a preoperative plasma CEA value be obtained in patients with either colorectal or bronchial carcinomas and be used as an adjunct to clinical and pathological staging methods.

### 4. Is CEA Helpful in Monitoring Cancer Treatment?

The regular sequential assay of plasma CEA is the best presently available for postoperative surveillance of patients to detect disseminated recurrence of colorectal cancer. As a monitor of colorectal cancer, CEA has been found to be elevated when residual disease is present or is clinically progressing. Following complete surgical removal of a colorectal malignancy, and elevated plasma CEA value should usually return to normal by 6 weeks. The failure to observe a reduction of a previously elevated preoperative CEA titer strongly indicates the presence of residual tumor. It is also possible to demonstrate in a substantial number of patients that CEA becomes significantly elevated before metastatic disease can be detected by clinical or other diagnostic measures. This information can be best achieved by obtaining plasma samples for CEA assay preoperatively, 4 to 6 weeks post-operatively, and thereafter at regular intervals as an integral component of overall patient followup. While slowly rising levels may be more indicative of local recurrence, rapidly rising values reaching very high levels, usually in excess of 20 ng/ml, are found most often with hepatic and osseous metastases.

For patients with metastatic tumor, the CEA assay may complement standard clinical measurements of tumor response to therapy. However, as in the case of other clinical laboratory tests, there are examples of discordance between the observed change in tumor mass and the corresponding CEA values. In patients with advanced unmeasurable tumor, especially colorectal carcinoma, CEA assays may offer the only index to measure changes in tumor burden. Although definite criteria to aid in deciding whether to continue or alter therapy in patients with unmeasurable tumor, based on serial CEA determinations, are not established, it appears that a steadily, markedly rising titer is indicative of a poor therapeutic response. In such circumstances, each physician should make an individual decision whether CEA monitoring will be of clinical value in the management of a particular patient.

It is important to remember that raised values, due to various causes such as smoking, intercurrent infection, etc., can be seen in patients where the tumor is clinically stable and that decreasing CEA values are not invariably a sign of successful theraphy. Furthermore, a proportion of patients with recurrent or advanced colorectal cancer may not show elevated plasma CEA values.

The role of CEA in the postoperative and therapeutic monitoring of patients with other types of cancer, such as pancreatic, gastric, and gynecological neoplasms, is less convincing than it is for colorectal cancer. In patients with metastatic breast cancer or lung cancer, especially small cell carcinoma, and significant CEA elevations, changes in CEA titers may be of value in reflecting response to chemotherapy. More studies are required to evaluate the role of CEA determinations for initiating or changing therapy in tumor types other than colorectal cancer.

The Panel would like to stress the view that the clinical utility of a tumor marker may be related to the efficacy of a therapeutic regimen. Where earlier recognition of disease progression is not accompanied by appropriate therapy, no benefit is gained. On the other hand, as more successful treatments for the major tumor types become available, CEA and other tumor markers will be more useful in the management of cancer.

### Additional Needs

The Panel has identified several areas for future study which should improve the clinical utility of the CEA assay: the improvement of assay methodology; the evaluation of monoclonal antibodies to CEA for improving assay specificity; the establishment of a laboratory quality control system using a CEA standard preparation; the clinical study of CEA in combination with other markers; the diagnostic role of CEA in biological fluids other than plasma; the individual and collective comparison of CEA with other specific diagnostic modalities; the estimation of tumor CEA content in relation to plasma CEA values; and the study of the pathophysiology and metabolism of CEA.

*This Consensus Conference on CEA (Carcinoembroyonic Antigen): Its Role as a Marker in the Management of Cancer was sponsored by the National Cancer Institute, assisted by the Office for Medical Applications of Research, Office of the Director, NIH.*

Members of the Consensus Panel: David M. Goldenberg, Sc.D., M.D. (Chairman), University of Kentucky Medical Center, Lexington, Kentucky; A. Munro Neville, M.D., Ph.D (Rapporteur), Ludwig Institute for Cancer Research, Sutton, Surrey, England; Anne C. Carter, M.D., State University of New York School of Medicine, Downstate Medical Center, Brooklyn, New York; Vay Liang W. Go, M.D., Mayo Clinic, Rochester, Minnesota; Edward Douglas Holyoke, M.D., Roswell Park Memorial Institute, Department of Health, State of New York, Buffalo, New York; Kurt J. Isselbacher, M.D., Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts; Philip S. Schein, M.D., Vincent T. Lombardi Cancer Research Center, Géorgetown University Medical Center, Washington, D.C.; Morton Schwartz, Ph.D., Memorial Sloan-Kettering Cancer Center, New York, New York.

Conference Organizers: K. Robert McIntire, M.D., National Cancer Institute, Bethesda, Maryland; Louis P. Greenberg, M.S., National Cancer Institute, Bethesda, Maryland.

**ELMCREST**

A COMPREHENSIVE
MENTAL HEALTH TREATMENT CENTER
FOR ADULTS AND ADOLESCENTS

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**

**Matthew Weinstein**
*Administrator*

**Lane Ameen,** M.D., F.A.P.A
*Medical Director*

**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

- ☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
- ☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
- ☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
- ☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
- ☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
- ☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
- ☐ GERIATRIC GUIDANCE CENTER
- ☐ DAY HOSPITAL

epi

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

AYR INSURANCE AGENCY

JANIS AYR ESPOSITO ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

# Current Medicolegal Issues

## THE CITATION

### Physician Awarded Damages From Clinic For Breach Of Employment Contract

A physician was entitled to an award of $15,806.66 from a medical clinic for breach of her employment contract, an Illinois appellate court ruled.

Before employment by the clinic, the physician discussed employment terms with the clinic administrator. She explained that because of the nature of her practice she might not generate as much money as some other physicians. She was an internist with a subspecialty in endocrinology. The administrator told her that a young physician was not necessarily expected to bring in enough income to cover her salary. Another physician at the clinic told her that because her subspecialty was not a major one, she would also have to care for patients with general medical problems.

She then signed a one-year contract beginning August 1, 1976. The contract provided for a salary of $36,000 and fringe benefits. During the contract period the physician told the clinic's receptionist that she did not want to see any more cold or headache cases or give physical examinations. She wanted to limit her practice to diabetes cases. The physician's patient volume varied from three to seven patients per day. The clinic expressed concern at her low production and she agreed to resume giving physical examinations.

Prior to the expiration of the one-year term of her contract no one from the clinic contacted her to negotiate a new contract or tell her she would not be permitted to remain. She continued to work at the clinic beyond the date of expiration of her contract.

Several days later, she was invited to a meeting of the clinic's plan committee on August 15, 1977. The committee asked her for reasons for her low productivity and she responded that adverse weather had caused cancellations, new internists at the clinic and new endocrinologists in the community provided competition, lack of patients coming into the clinic and lack of follow-up visits by her patients.

The committee recommended that she become involved with a medical school, give seminars and conferences, participate in student teaching and take all patients. Several days after the meeting the administrator sent her a letter stating that her salary would be reduced to $25,000, retroactive to August 1, 1977. She protested, claiming breach of contract and met with the administrator but no agreement on salary was reached. Her services were terminated as of October 31, 1977.

In a breach of contract action against the clinic, a trail court ruled that the physician's contract was renewed by implication when she continued working for three weeks beyond the expiration of the first one-year contract period. A jury awarded her $22,152.80, but the trial court reduced the amount to $15,806.66.

On appeal, the court said that the trial court should not have reduced the award without the physician's consent. The award was reduced by the amount of checks she had received from the clinic after August 1, 1977. The court affirmed the award subject to obtaining the physician's consent to reduction of the award. — *Foster v. Springfield Clinic,* 410 N.E. 2d 604 (Ill. App. Ct., Sept. 15, 1980)

### Nurse Awarded Damages for Dismissal

A nurse-anesthetist was entitled to $11,950.86 in damages under Montana's "Conscience Law" after her dismissal from a hospital for refusal to participate in a tubal ligation, the Montana Supreme Court ruled.

The nurse's eight-year employment was terminated on August 24, 1977. She had eight years remaining until retirement and about seven months left on her employment contract. She filed suit for damages under Montana's "Conscience Law," which recognized her right to refuse to participate in the operation. A trial court awarded her $11,950.86 for lost wages under the balance of her employment contract and lost insurance benefits less the wages she received in another job during the seven months.

---

*THE CITATION is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.*

On appeal, the nurse-anesthetist contended that she was entitled to future damages besides the compensation for lost wages. The Supreme Court said that the trial court did not err in using the compensation theory to determine damages under the "conscience Law." The trial court did not abuse its discretion in determining that future damages were not reasonably certain to occur. The nurse-anesthetist did not prove any punitive damages or damages for mental distress and she could not recover on those claims, the court said.

The trial court's decision was affirmed. —*Swanson v. St. John's Lutheran Hospital,* 615 P.2d 883 (Mont. Sup. Ct., Aug. 13, 1980)

Editor's Note: A prior decision in this case was reported in THE CITATION, Vol. 40, No. 4, p. 45.

### Hospital Must Permit Jewish Circumcision

A hospital must permit an Orthodox Jewish infant to be circumcised in a manner religiously acceptable to the father, a New York trial court ruled.

The father and mother were Orthodox Jews. The father sought a court order to have his son circumcised in a manner acceptable to him religiously. That required circumcision performed on the eighth day by a mohel, a religiously qualified person. The child was healthy and a religious circumcision ("bris") could be performed. The hospital objected because only persons admitted to hospital privileges could perform surgical procedures, and it had admitted no mohel to hospital privileges.

Granting the motion by the father, the court said that he was entitled to have a bris performed for his infant son. The court said that the right to have the bris performed was specifically mandated by statute. A section of the Public Health Law stated that "every patient's civil and religious liberties . . . shall not be infringed, and the facility shall encourage and assist in the fullest possible exercise of these rights." The court said that the public policy enunciated in the section on patients' rights was not limited to nursing homes but must be interpreted to include hospitals.

The court ordered the hospital to permit a mohel certified by any other hospital in the city to perform the bris. The court said that the parents and nine other Jewish males present must observe reasonable precautions such as wearing surgical gowns and remaining away from the infant as the hospital directed. —*Oliner v. Lenox Hill Hospital,* 431 N.Y.S.2d 271 (N.Y. Sup. Ct., July 10, 1980)

### Examination of Panel Members Properly Limited

A trial court properly limited questioning of physician members of a medical malpractice panel in a subsequent malpractice action, a New York appellate court ruled. A physician removed a wart from the patient's thumb in June 1966. The thumb was amputated in 1974, and her condition was diagnosed as epithelioid sarcoma. As of July 1976, the cancer had metastasized to both of her lungs. A medical malpractice panel unanimously recommended that the physicians being sued were not liable. The patient appealed from a trial court's decision in favor of the physicians. The appellate court held that the trial court did not unduly restrict questioning of the physician members of the panel, including attempts to elicit their own expert opinion testimony. —*Bernstein v. Bodean,* 427 N.Y.S.2d 834 (N.Y. Sup.Ct., App.Div., May 12, 1980)

### School Can Refuse To Admit Children Without Immunizations

Exclusion of children from school because of failure to show they had been immunized against rubella and rubeola did not violate their mother's constitutional rights, a Maryland appellate court ruled. The mother's objection was not based on conflicts with the tenets or practices of a recognized church or religious denomination but on her "deeply held moral convictions." The court found that her beliefs were philosophical and personal and based on purely secular considerations and therefore were not protected by the religion clauses of the constitution. —*Syska v. Montgomery County Board of Education,* 415 A.2d 301 (Md.Ct. of Special App., June 10, 1980)

*—THE CITATION, Vol. 42, No. 8/February 1, 1981*

# Month in Washington

The late summer doldrums of the nation's capital were snapped with the return of Congress and top federal officials, including President Reagan, from summer vacations.

But the decision by the Administration to seek additional reductions in federal spending has tossed aside a hoped-for Congressional adjournment date of mid-October with mid-November being substituted. And this date is thought by many to be overly optimistic.

Despite its earlier history-making budget reduction of some $30 billion, the Administration is now faced with an estimated $60 billion deficit in this fiscal year (Oct. 1, 1981) with even higher red ink margins forecast in the next two years.

In its drive to get the deficit down to $42.5 billion, the pre-August guess, some $18 billion of new cuts must be legislated. Health programs aren't a major target area, but few will escape the economy ax.

The President's urgent request for a second round of budget cuts would involve a reduction of $1 billion or more in federal health programs, already hit hard by the budget reconciliation measure approved last August.

Most of the President's proposed savings—$8.4 billion—would come from a 12 percent, across-the-board slice in appropriations for all domestic programs. The health programs at the Health and Human Services (HHS) Department currently are budgeted at about $6.5 billion, meaning they would be reduced about $780 million. Further cuts apparently would come from Medicare and Medicaid.

The President said in a nationally-televised speech that he will seek $2.6 billion in cuts from entitlement programs in the budget not subject to the appropriations process. These include Medicare and Medicaid, but how much they would be hit remains to be seen.

The initial reaction from Congress was that the Administration will have a much tougher time winning over the lawmakers this time around because politically popular programs would have to be cut to the bone. Many lawmakers talked in terms of paring defense outlays more than requested by the Administration and going easier on the domestic side.

In his speech, the Chief Executive also asked Congress to authorize interfund borrowing among the Social Security trust funds, a proposal that would allow the Medicare trust fund—in the black at the moment—to be tapped to help out the red-ink retirement funds. President Reagan described this "as a temporary measure to give us time to seek a permanent solution."

The larger issue of bailing out Social Security over the long haul would be placed before a bipartisan commission "which will review all the options and come up with a plan that assures the fiscal integrity of Social Security . . . "

Budget Director David Stockman said a weapon the Administration may be forced to use to achieve the cuts could be the Presidential veto of appropriations bills that exceed Administration targets. He noted that a two-thirds vote is required to overturn a veto, implying that Congress would not be able to muster that margin on Presidential turn-downs.

Meanwhile, the government (as of Oct. 1) is operating on a continuing resolution at the expenditure levels of the past fiscal year.

*****

Sen. Orrin Hatch (R-UT), Chairman of the Senate Labor and Human Resources Committee, is sponsoring legislation to modify the Delaney Clause that is an absolute prohibition on food additives found to cause cancer in man or animals. The clause has been attacked over the years as imposing too strict a ban on additives that have caused cancer only in test animals and in enormous doses. The new bill would apply only to substances that pose "a significant risk to health."

House hearings are also slated on proposals for "consumer choice" national health plans, though the Administration's bill isn't due until the end of the year.

Legislation has also been introduced to place a moratorium on Federal Trade Commission activities involving the learned professions, including medicine. There are 46 sponsors in the House.

In addition, major measures have been introduced to reform federal regulatory procedures to curb unnecessary regulations and give Congress the power to veto rules that overstep agency authority.

*****

The Administration's health block grant program is slated to shortly wheel into operation, but some states may decide to delay for as long as a year.

At a series of regional conferences, Administration officials have been assuring state officials they will be allowed "maximum flexibility" in administering the programs covered under the block grants.

Edward Brandt, M.D., Assistant Secretary for Health at the HHS Department said his agency is "carrying out the principles of flexibility, minimum federal intrusiveness, and absolute neutrality in its implementation activities."

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

Dr. Brandt noted that states may choose to assume responsibility for administering the block grant programs Oct. 1 or to phase in the operation of the blocks during the fiscal year starting October 1.

Congress put some 20 Public Health Service programs into four block grants—Preventive Health; Maternal and Child Health; Mental, Drug and Alcohol; and Community Health Centers. States can administer the block grant funds with much more freedom than existed for the categorical programs.

Dr. Brandt told the Block Grant Regional Conference in Dallas this month that HHS is authorized to continue making awards to individual program grantees in states until the states assume control over the block grants. "But we will only take this action if an existing grant comes up for renewal before you (the states) take over the block containing that particular grant program."

The amount of money the states will receive for the block grants won't be known until Congress completes the appropriations process. Dr. Brandt said "the best I can tell you now is that we are going over prior year obligation figures for each program in the blocks to establish the basis for calculating your particular state's share of each block."

The law requires each state to tell how it intends to spend its block grant funds. Citizens are supposed to take part in the decision-making process at the state level, but "we will have no federal guidelines or proposed federal regulations concerning public participation."

Said Dr. Brandt: "The approach we have taken is designed to make sure that the states will truly retain their flexibility and responsibility for decision-making. We intend to regulate only in a few absolutely essential areas. But for most provisions of the block grant law, there will be no regulatory guidance. This is certainly the intent of the block grant legislation proposed by the President and enacted by the Congress."

*****

The Senators heading the Republican and Democratic campaign committees have said the American Medical Political Action Committee (AMPAC) played an important role in the last elections. They urged an even greater role for AMPAC in the future.

Addressing AMPAC's political education conference in Washington, D.C., Sen. Wendell Ford (D-KY) told 400 AMPAC members that "you people wrote the book on how to make a PAC work and without question your organization's record of success stands alone."

Describing AMPAC as "a force to be reckoned with," Sen. Ford said in prepared remarks that PACS exert a positive influence on the political process. "Keep up the good work," he said, "and remember that the bottom line is a more responsive and responsible government."

"If ever there was a time for individuals and groups to come together to help minimize the impact of the budget reductions, that time is now," he said. "The need will never be greater or more urgent because the government can no longer afford to carry out all responsibilities."

Sen. John Heinz (R-PA) said that without the help of AMPAC and similar groups the Republicans would not have been able to capture the Senate where GOP control was essential for President Reagan's legislative victories. "We will bring the budget in line; that you can depend on," the Senator said.

AMPAC Board Chairman John Smith, M.D., said the 1980's will bring sweeping changes. "We must play a major role. Our voices will be heard and our presence felt," said the San Antonio physician. Dr. Smith said AMPAC "must be ready to influence positively the decisions made. Medicine and politics do go together."

James Sammons, M.D., Executive Vice President of the American Medical Association, hailed the 20th Anniversary of AMPAC, one of the first political action groups founded. Dr. Sammons said a survey for the AMA showed that 65 percent of all physicians agree that it is the professional responsibility of physicians to support political representative actions undertaken by the profession. Most physicians also agree that "AMPAC has been established to represent the political interests of physicians regarding the support of political candidates."

However, these high percentages of support are not reflected in AMPAC membership, Dr. Sammons noted, with only 12 percent of all physicians and 22 percent of AMA members contributors to AMPAC. He urged the AMPAC audience to make increased membership a top priority.

Make sure that every physician is asked to join, said Dr. Sammons. "We have too often heard doctors say they have not been asked."

The AMPAC members were briefed by top lawmakers and political experts on the political scene in Washington and on the outlook for the future. Some 200 Senators and Representatives attended a Congressional reception hosted by AMPAC.

Edward Rollins, Deputy White House Assistant for Political Affairs, said part of the success of the Reagan Administration "has been due to the efforts of groups such as AMPAC." He expressed optimism that the Administration will be able to build on the 1980 coalition of support and pick up seats in the House and Senate in the 1982 elections despite the tradition that the party in power loses during off-year elections.

Rep. Hal Daub (R-NE) said PACs are a healthy addition to the right of groups to exercise free speech. Political action committees provide valuable services for elected officials and their independent expenditures "serve the constituencies very well."

**Connecticut Medicine**

*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editorial Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
James D. Kenney, *New Haven*
Ramon N. Kranwinkel, *Danbury*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Stewart J. Petrie, *Derby*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*

# EDITORIALS

## Measure for Measure

Many years ago, a 50-year-old short, obese, balding and bearded white male, H.S., was referred to me for a G.I. series. He complained of dysphagia and heartburn. The examination demonstrated esophageal dysmotility and free reflux. Manometry confirmed abnormal peristalsis and a low L.E.S. resting pressure. Isotopes were used to image and quantify the reflux. Endoscopy with biopsy established a mild esophagitis. Gastric analysis revealed a low pH and gastrin levels were found normal on several occasions. Appropriate therapy resulted in clinical relief but did not modify results obtained on the repeated tests.

A few years later, the same patient appeared with recent onset of gastric outlet obstruction. A succussion splash was audible. 1,000 cc of fluid and undigested food were obtained on intubation. A saline load confirmed 50% retention at the end of 3 hours. Isotopic studies with solid and liquid meals documented delay in emptying more marked with solids, and permitted imaging and quantification. Gastric analysis with and without stimulation, again revealed a low pH. Serum gastrins were normal. A duodenal ulcer was found on G.I. series and endoscopically confirmed. The patient responded to medical therapy.

Once again, I saw poor H.S. when he was complaining of diarrhea and weight loss enough to make him look less prosperous. His stools were bulky, fat, and stank. He was anemic. A small bowel study was consistent with sprue. His stools were tested for fat and retested after ingestion of a fixed amount of fat for four days. Serum iron and iron binding capacity and serum folate were determined and $B_{12}$ absorption was studied isotopically. Xylose, glucose, and lactose tolerance tests were performed. All chemical constituents of his bodily fluids were analyzed. Small bowel biopsy, through the endoscope, revealed villous atrophy. His response to dietary restrictions was remarkable. More than one person who saw the pre- and post- therapy tests, including repeat biopsy, was heard to remark "classical" as he or she left the conference room.

I lost sight of H.S. after that, but I always think of him as a yardstick for current medical practice. We had repeatedly plumbed the depths of his illnesses and by mensuration modified his therapy not one iota. We teach and are taught to measure, for only that which can be measured is true. Must our patients be reduced to ciphers? Where has art gone?

Solomon S. Schwartz, M.D.

*Attending Radiologist,*
*The Hospital of St. Raphael;*
*Clinical Professor of Radiology,*
*Yale University School of Medicine*

## Divide and Conquer (Malpractice)

How ironic that the same day's mail should bring both the enthusiastic announcement from CSMS that the Governor had signed the legislation granting a charter for our physician-operated insurance company (complete with photograph of smiling faces) and the equally enthusiastic announcement from the minions of CNA that we were very fortunately being offered a 12% reduction in professional liability premiums!! What excellent timing to produce utter confusion in the minds of our membership.!

---

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

For many long months news bulletins from New Haven told us of the diligent efforts and ultimate progress of our Professional Liability Committee to create the most effective independent company based on the various successful models in the nation. The House of Delegates overwhelmingly endorsed the establishment of the CSMS-sponsored company and the body politic of the Hartford County Medical Association at its annual meeting had greeted each mention of our own company with roaring approval. Dr. Todd of the AMA and a key figure in New Jersey's overwhelmingly fiscally sound organization told the House that all we needed for success was a united front of all the state's private physicians. Where did we fail and more poignantly why did we fail?

We had a devoted group of physicians on our Professional Liability Committee who voluntarily expended untold hours of effort. We spent many many thousands of dollars to hire proficient experts who guided us well through the legislative and legal mazes and brought us to our goal of obtaining a charter. We had the unanimous mandate from the House of Delegates instructing us to initiate and develop our own company. The House elected two Boards of Trustees to oversee the professionals to be hired to operate our company. We did everything but make certain that our unanimity was more than skin deep. Our ship foundered on the shoals of disunity. Fairfield and New Haven Counties were appalled by the reality of regional underwriting even though it is inevitable. Senior councilors balked at the capital outlay because of their age and possible short years of practice ahead even though our secondary insurer offered to lend the major portion of this outlay. Hartford County was enticed by the immediacy of a short-term offer of a bargain despite its divisive effect on our longterm strategy.

Other problems of disunity are better left unmentioned in this editorial. It is not too late to mend our fences. The physicians of Connecticut must function cohesively; in this small state our only hope will be our solidarity. The Medical Society of the State of New York has recently guided a major legislative victory which will reduce their premiums. CSMS must renew its efforts to preserve unity and make up for this lost year by having our company solidly in force by October 1, 1982. Can we be blind to the strong push by CNA, Aetna and now St. Paul. These companies show us how substantial is their desire to sell us insurance. Can we afford to be so economically imprudent—our own company must be started.

Merrill B. Rubinow, M.D.

*Councilor, Hartford County*

## Chronic Vegetative State

During the last couple of decades, much has been written about the ethical and legal problems involved in death and dying. However, a consensus on the issues has not yet been reached, even in the medical profession, let alone the law. Part of the difficulty stems from three related but different conditions: death, terminal illness, and the "chronic vegetative state." Even the simplest of the three, acceptance of and adding the concept of brain death to the traditional definition of death has not yet been completely resolved, after more than two decades of discussion. The most difficult of the three, however, is the medical, ethical, and legal management of the Karen Ann Quinlan type of case, the "chronic vegetative state."

The problems in its management are illustrated in this issue in an article from *Illinois Medical Journal:* "A Decerebrate Patient: Eighteen Years of Care." The patient, age 27, on October 26, 1956, in a fall from a horse suffered a head injury resulting in permanent loss of function of the cerebral cortex, leaving the brain stem intact: the result, a permanent vegetative state. She "lived" for 18 years: *The Guinness Book of World Records* includes such a patient who lived over 37 years; Karen Ann Quinlan, whose court proceedings stimulated world-wide interest, is in her sixth year of coma.

Included with the article are comments by four nationally known experts in bioethical and legal problems. Dr. Samuel R. Sherman of the AMA states: "The Herculean efforts to sustain the life of this patient for 18 years represents the highest traditions of the medical profession in this country," and, "They were extraordinary in nature, compassionate in all respects, and entailed astronomical cost . . . " Father Paris states: "This case is a multiple tragedy: the accident, the parents' denial and delusioned hopes, the abdication of professional responsibility, and the misallocation of societal and medical resources." As for the cost, he estimates that at "$300 per day and an inflation rate of 12%, the figure is $6,104,590. . . "Professor Healey states that "The Anglo-American legal tradition has refused to require that physicians do everything . . . all the time." Also, "Physicians have no legal obligation to provide non-efficacious treatment . . ." Dr. Cranford, while commending the authors for sharing details of their case, comments that many important questions are not included by them, especially the thinking and feeling of the medical staff and family, which make it difficult to comment fully. He believes it is essential to be honest with the family about the hopeless prognosis. And importantly, he notes that the concept that "Where there's life, there's hope" has been fairly well rejected in the last decade or so.

The attending physicians said this about the ethics involved: "We can only conjecture as to the right moral stance to be taken in the care of this type of patient." They conclude that "The compassionate attitude toward the patient's parents and the acceptance of the standard of where there is life, there is hope, were the ruling motives in caring for this patient."

Though this patient died in March 1974, approximately 18 months prior to the prolonged and extensively publicized court proceedings of Karen Ann Quinlan, "Death with Dignity" was being nationally discussed. It was important enough so that in October 1972, there were extensive congressional hearings before a special committee on Aging in the United States Senate: "Death with Dignity: An Inquiry into Related Public Issues."

Because the word extraordinary is used so often to describe medical treatment in such cases, it is worthwhile to discuss it. Though it has a long history in Roman Catholic ethics (as recorded in another article in this issue) its use has been accepted by other religious faiths and ethicists, and even by some courts—but with some confusion from different interpretations. Pope Pius XII, in a talk before a Congress of Anesthesiologists in 1957 said: " . . . Extraordinary means of preserving life are all medicines, treatments, and operations, which cannot be obtained or used without excessive expense, pain, or other inconvenience for the patient or for others, or which, if used, would not offer a reasonable hope of benefit to the patient." Even intravenous feeding to prolong life in a patient whose death is imminent or prescribing antibiotics in the Karen Ann Quinlan type of case would be extraordinary ethically, though not medically. What the concept and word mean to physicians in a medical sense may be different from its use by ethicists in an ethical sense. Unfortunately, the AMA contributes to the confusion. While it states that a physician is not ethically bound to give extraordinary treatment to a person with a terminal condition or in a chronic vegetative state, it has declined to define extraordinary lest it be interpreted as a legal standard. There is disagreement about this reasoning.

Did this patient receive "extraordinary" medical care? She had a thoracocentesis and a paracentesis; she was given diuretics, oxygen, Dilantin, and several units of blood. She was fed intravenously and by nasal gastric tube. She even received antibiotics for pneumonia, a condition that used to be called the friend of the hopeless and dying patient. And pap smears were done! Though medically the treatment was not extraordinary, to many ethicists it was.

It would seem that a near consensus in the management of patients in a chronic vegetative state is being reached. First, a physician must determine if the loss of function of the cerebral cortex is complete, irreversible, and permanent. As Dr. Cranford, a neurologist, states, this should not take longer than some months, certainly a year. He then has the obligation to inform the family of this, and all of the resulting issues. For himself, he should know the ethical guidelines of the profession: the AMA permits withdrawal of extraordinary medical care in such cases, with the concurrence of the family. If his own ethical and religious beliefs conflict with those of the patient and the family, he should withdraw for some other physician. The compelling guides are not his own beliefs, but those of the patient, and if the patient is incompetent, of the family. It is advisable in all such problem cases to have a consultation, preferably the chief of service, or an ethics committee if there is one. A lawyer need not be consulted, but if he is, it is essential that he be familiar with such cases (most are not), both ethically and legally. Up to now, no physician has had any suit, civil or criminal, brought against him for withdrawing treatment in the hopelessly or terminally ill patient, with the family's permission.

We should not need being reminded that such a patient is a person, entitled to compassion and optimal nursing care, as was given to the patient in this article.

Fred Fabro, M.D.

## Statement on Breast Reconstruction

The Connecticut Division, American Cancer Society recognizes the availability of breast reconstruction as an integral part of the management of the patient with breast cancer for whom mastectomy is planned or done.

The choice of whether or not to undertake reconstructive surgery is rightfully made by the patient in consultation with her physicians. However, we believe it is essential that when faced with a diagnosis of breast cancer, full and informed consideration of the course of action to be taken should include a clear knowledge of: the availability of breast reconstruction, the greatly improved techniques now in use, the potential for improved rehabilitation based on the experience of women who have had such reconstructive surgery.

A 1979 Survey of Public Attitudes conducted for the American Cancer Society by Lieberman Research revealed that only 47% of the women interviewed had heard of breast reconstruction, and that 58% of those interviewed said that knowing about breast reconstruction makes them "feel better and less anxious about breast cancer." Lieberman's conclusion was that more needs to be done to inform women about progress being made in breast reconstruction. Presumably, less anxiety connected with breast cancer may increase the likelihood of early detection by encouraging women to seek medical attention at the earliest symptoms.

Adopted by the Board of Directors, June 10, 1981

# Letters to the Editor

**Letters to the Editor are welcomed and will be published, if found suitable, as space permits. They must be signed by all authors, typewritten in double spacing (including references), submitted in duplicate, must not exceed 1½ pages in length and will be subject to editing and possible abridgment. To be considered for publication, letters referring to a recent *Journal* article should be received within six weeks of the article's publication date.**

## DOES THE DEPARTMENT OF INCOME MAINTENANCE DISCRIMINATE AGAINST PRIVATE PRACTICE?

*To the Editor:* The policy of phasing out state mental hospital services has placed the serious burden on the local community of providing care for indigent chronic psychiatric patients, as attested to by both the American Psychiatric Association and the Connecticut Psychiatric Society.

The state and community hospitals have encouraged the use of non-medical therapists and physician assistants in an attempt to increase productivity and provide service. Public Law 717 allowed doctors wide latitude in hiring assistants.

As physicians in private practice began utilizing non-medical therapists and physician extenders in their private offices as they do in the hospital, a problem arose with the Department of Income Maintenance (D.I.M.). In the 1976 schedule of fees, the policy is stated, "The listed values apply only when these services are performed by or under the supervision of a physician." The D.I.M. began interpreting this to mean that if the doctor didn't do the work himself they wouldn't pay. The rules were not written or published and were applied primarily to doctors in private practice who were "large providers." The rules were not applied to hospitals or to mental health clinics or to providers in general.

Thus a doctor who met a community need by hiring a nurse practitioner or physician's assistant to do house calls could be told "no payment unless you personally go with the nurse on the house call!"

A pediatrician hired a nurse to give well baby immunizations. The D.I.M. refused payment. As a result, the immunizations are given by a visiting nurse or a nurse at the hospital at greater expense.

A family practitioner used his nurse technician to do EKG's in nursing homes; D.I.M. refused payment. As a result, the patient is transported to and from the hospital by Medichair (cost $25 each way), where a nurse technician with identical qualifications does the EKG at many times the cost.

A private psychiatrist, interested in maintaining chronic psychiatric patients in the community is not paid by the D.I.M. for over 18 months. He stops seeing patients some of whom are admitted to inpatient hospitalization at almost ten times the expense. Two others, youths in their twenties, are dead from suicide—a preventable disease.

In a state and publicly supported mental heqlth clinic the fee is $19.86 regardless of whether the psychiatrist or a non-medical therapist treats the patient. In most such clinics the staff is preponderantly non-medical. A psychiatrist in private practice with office staffing similar to that of a charitable clinic is paid $15 for all visits regardless of whether he sees the patient or an assistant does. It is difficult to deny that private practice is discriminated against in this case.

In disputes between a private practitioner and the D.I.M. the patient is often the loser as the doctor, angered by arbitrary and discriminatory rulings or by bureaucratic fog, just stops seeing D.I.M. patients. This tends to deny private practice to D.I.M. patients and force them to hospital emergency rooms or clinic care, establishing in effect a two-tier level of medical care which is also more expensive and in many cases tremendously more expensive.

Currently indigent patients, and doctors treating them, tend to suffer from negative publicity. A doctor showing high productivity is subject to derogatory criticism and the D.I.M. is apt to take the position in a dispute that the doctor is criminal and fraudulent until he "pays up" or proves otherwise.

A large part of private care is denied D.I.M. patients because the doctors have no stomach for this type of treatment and simply refuse care. Those that ask for the pertinent regulations and definition to assure themselves that they have not been arbitrarily discriminated against are subject to long delays, unanswered letters, bureaucratic run-around and legal expense.

No other state agencies have interpreted the *rule done by or under the supervision of the physician* the way the D.I.M. has.

Admittedly the D.I.M. does not have the staff to make valid judgments as to whether an innovative and imaginative practice is providing a social need and is compatible with good medicine.

A constructive suggestion would be to have a broad based committee from the medical society who could hear both the D.I.M.'s position and that of the private practitioner. I specify broad based because it is possible for individual doctors to have diametrically opposed views on the same subject. Thus one doctor might say, if asked by the D.I.M., "No one but an M.D. can make a house call." Another doctor might say, "Use of a nurse practitioner for house calls is an excellent idea which meets a community need and encourages private practitioners to provide service and employment."

In summary, I would stress the following:

1. There are increasingly large numbers of chronic indigent psychiatric patients in the community as public mental hospitals are phased out.
2. If private practitioners can be encouraged to treat indigent patients an appreciable gap in the delivery of medical care can be closed. The Connecticut Psychiatric Society has a responsibility of providing leadership as well as the Connecticut State Medical Society.

I would be interested in hearing from readers who have had favorable or unfavorable experiences with the D.I.M. and would appreciate their observations as to how the situation may be improved.

Richmond C. Hubbard, M.D.

*Attending Psychiatrist,*
*Danbury Hospital*

## NOTICE TO CONTRIBUTORS

Members of the Connecticut State Medical Society reading papers before other organizations are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult INFORMATION FOR AUTHORS. This material may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Please send them to:
J. Alfred Fabro, M.D., Editor
*Connecticut Medicine*
160 St. Ronan Street
New Haven, Connecticut 06511

# Reflections from the Dean's Office

## Controlling the *Summum Bonum?*

ROBERT U. MASSEY, M.D.

Some advocates for the study of history say that it has utility in helping us to invent the future after our own liking.

Any kind of serious study improves the gift of prophecy; the future comes out of the past and is not likely to take on completely different and unrecognizable forms. Whether, however, *the future,* apart from our individual *futures,* is something about which we have much to say is problematic. The forces which shape economic and political destiny seem remarkably resistant to laws, policies, and the work of planning committees and general assemblies.

Right now most Western governments are concerned about the high and rising costs of medical care; those costs are either running ahead of inflation or are certain to do so if controls were to be lifted. It is as though there had never been enough care; the demands arising from wants and needs threaten to overwhelm our capacity to meet them. It seems as if the desire for medical care were nearly infinite, although there are rumors from the Pacific Northwest, where physician-to-population ratios are ten times as high as Flexner thought was enough, that physician incomes may be coming down. Perhaps we are near the limits in some specialties in some regions, but that is not general.

Costs are high for many reasons: the market is imperfect and there are few incentives to hold prices down or to cut costs; money is plentiful in spite of high interest rates; technology, especially half-way technology, is expensive; there are larger numbers of elderly people and their needs are greater; hospital energy and personnel costs are rising faster than inflation; and more social and individual problems of everyday life have been turned into medical problems. Ivan Illich and Renee Fox have called this the medicalization of society. Drunkenness has become alcoholism, transformed from imprudent behavior to a sin, then to a crime, and finally to a disease. The ordinary ups and downs of life have been blunted for millions by tons of diazepam; an upper respiratory infection is the single most common reason for seeking medical care.

Observations have been made concerning the amount and kind of medical care which individuals and groups receive; no clear relationship to health is statistically evident.

We need to be careful about repeating these observations as though they revealed some new truth. Aspirin taken for headaches does not affect mortality statistics, nor does it improve maternal mortality figures, but we should not therefore condemn its use as an unwarranted addition to health care costs. The finding of a resectable meningioma in a headachy patient is of incalculable value for the patient but may never show up in the statistics. Medical care, health, and expectations for health may not be related in ways which the epidemiologist can demonstrate or the patient understand; patients may not always be seeking for health, but they do want medical care: relief from pain, escape from depression, restoration of function, or a good night's sleep.

Many undoubtedly come to us too often and for the wrong reasons. If demands on the system are to let up, we must tell our patients that medicine has only some answers for them; that all of living should not be "medicalized"; that many health problems can be prevented by taking thought or relieved by laughter and simple remedies. We should help our patients to know these things; we should also work hard to have them taught in our schools and homes.

Our chief objective in all this should not be to reduce costs or to improve productivity; it is not even the achievement of health, for that is a means, not an end. The Greeks had a notion of the good life; philosophers and religious teachers have defined it differently, but most have agreed that we shall not find it by pursuing something else as the *summum bonum.*

There is no one strategy which will by itself slow the rising costs of medical care; changing the way we order our values may be essential, however, for any combination of strategies to be effective. If health continues to be our ultimate concern rather than a means, and not always an essential one at that, we shall pay almost any amount in our vain efforts to achieve it.

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

# Have you considered participation?

- The Century Contract Comprehensive Schedule of Services has been increased *three times* in 18 months.
- These increases, in the aggregate, have amounted to 51.6%.
- We will continue to update the Century Contract schedule annually.
- Participating Providers receive prompt payments directly from Blue Cross & Blue Shield.
- Your participation can reduce receivables and eliminate some billing steps.
- Over one million Connecticut residents are Century Contract members for whom claims totaling $82.5 million were paid in 1980.
- Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

**Blue Cross**
**Blue Shield**
of Connecticut

THE HEALTH CARING PEOPLE

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Provider, call our office or complete the form below and send it to:

Blue Cross & Blue Shield of Connecticut
Professional Relations Department
370 Bassett Road
North Haven, CT 06473

Telephone: 1-800-922-1742 or 265-8203

Name ______________________ Telephone ______________

Address ______________________________________

City ______________ State ____________ Zip ____________

CM781

# The Rights of Minors and the Rights of Parents Revisited I

JOSEPH M. HEALEY, J.D.

Several recent cases and controversies concerning parental authority to decline medical treatment for minor children have attracted considerable attention during recent months. In California, the cases of Phillip Becker and Amanda Accardi have been unfolding before the eyes of an interested national audience. Closer to home, the *Hartford Courant* has given extensive coverage to decision making in newborn nurseries in Connecticut. The problems raised by these cases and controversies are not peculiar to America. In August, the Court of Appeal in England considered a case in which parents sought to refuse surgical repair of duodenal atresia for a 10 day old baby who suffered from Down's Syndrome. Since the issues in this case are of such significance to American physicians, the handling of the case by the English Court is a good place to begin a consideration of the legal rights of minors and parents in the health care process.

The facts in the case appear to be straightforward. The basis of the parental refusal was the contention that since their daughter would be severely handicapped mentally and physically, it would be unkind not to allow her to die.[1] The State intervened, succeeded in having the child made a ward of the State, and then sought judicial authority for the performance of the operation. The trial judge refused the request concluding, as the parents had claimed, that it was not in the child's best interests that the operation should take place. An appeal was entered and the case was brought to the Court of Appeal.

Lord Justice Templeman acknowledged that though great weight should be given to the views of the parents, the final decision rested with the court. Evidence presented to the court showed that without the operation the child would die in a few days. With the operation, she might be affected by a heart condition and die within two or three months. If the operation was successful, her life expectancy would be 20-30 years with severe mental and physical handicaps. The Lord Justice identified as the critical question whether it was in the best interests of the child that she should be allowed to die and concluded that in this case it had not been demonstrated that her life would be so awful that she should be condemned to die. Though there might be cases where the future was so uncertain and the child's life was found to be so full of pain that the court might act differently, in this case the court would support the authorization of the operation.

Lord Justice Dunn agreed in the conclusion stressing that the paramount consideration was the welfare of the child. Since there was no prognosis as to her future or the quality of life she would have (other than the 20-30 year life expectancy) and since there was no evidence that her life would be an intolerable one, the Lord Justice concluded that she should have the operation and be put in the same position as any other child with Down's Syndrome. The court therefore overruled the decision of the trial court and authorized the performance of the operation.

At the heart of this and similar cases are a series of problems associated with the rights and duties of parents and children. To what extent do parents have the sole authority to determine what is in the best interests of their children? Can such a determination ever involve the refusal to employ available, "efficacious" treatment? On what basis is the law justified in intervening in the parent-child relationship, to overrule the parents' decision and to substitute its determination of what the best interests of the child actually require?

Two major schools of thought exist about these questions. One holds that parents have a legal obligation to provide all necessary medical care for their children. This obligation does not allow parents the option to decide whether the quality of the child's life is such that the life should be terminated. In this conceptualization, parents do not have the right to withhold surgical repair of duodenal atresia as a way of allowing a physically and mentally handicapped person to die. The other school of thought holds that the parental obligation is to determine what is in the best interests of the minor, even if the result is that treatment will not be provided in cases such as the one under discussion. From this perspective, families and physicians should have broad discretion and not be forced to provide treatment against their will. Proponents of both sides have argued passionately for the merits of their position. The effect of this debate upon the legal rights of parents and their children will be explored next month.

REFERENCES

1. Re "B" (Minor). Court of Appeal: Templeman and Dunn L JJ, Aug. 7, 1981. Reported in Agyeman B. "Authorisation of Operation on Infant with Down Syndrome," Lancet ii:413, 1981

---

JOSEPH M. HEALEY, J.D., Associate Professor of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, CT.

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### EMERGENCY MEDICINE

EMERGENCY PHYSICIAN—Full time position available at modern 226-bed community hospital in eastern Connecticut; 33,000 visits yearly; 42-hour work week; salary negotiable. Send CV to G.L. Springer, MD, Chief of Emergency Room Services, William W. Backus Hospital, 326 Washington St., Norwich, CT 06360.

### FAMILY PRACTICE

Two semi-retired physicians seek an associate in Family Practice or Internal Medicine to gradually take over two fully equipped offices in south-central Connecticut. Call 624-2333.

Solo practice available. Plan to retire within the next year. Call J. Chasnoff, M.D., West Haven, 934-1115. Excellent practice. Central location.

Retiring general practitioner leasing fully equipped office and practice in seashore town near Norwalk. Write: CSMS, GP/RS.

Primary Care Physician. Central Fairfield County location. Accessible to 2 hospitals. Rapidly developing community. No M.D.'s in area. Excellent opportunity for one or two-man office. Write or call Dr. Bernard S. Unger, Appletree Lane, Norwalk, CT 06850, 203-847-3065, 203-544-8219.

### INSTITUTIONAL MEDICINE

DEPUTY MEDICAL DIRECTOR/PHYSICIANS - Hospice Care, FT/PT, Inpatient and at Home services, 44-beds, Team approach, unique opportunity to help shape new program. Medical School faculty appointment possible. C.V. to S. Lack, M.D., Connecticut Hospice, 61 Burban Drive, Branford, CT 06405.

Immediate need for Physicians. Senior Physicians and Internist. Temporary License available for those eligible for Connecticut Licensure. Contact: Superintendent, Norwich Hospital, Norwich, CT 06360.

Full Time Director, Division of Medical Services, Board Certified in Internal Medicine; with interests in Rehabilitation Medicine; to manage general medical service in 121 bed specialty hospital. Supervisory experience necessary. Interest in quality assurance and infection control an asset. Attractive competitive salary and fringe benefit program. Housing available. Send resume and salary requirement to: The President, The Gaylord Hospital, Box 400, Wallingford, CT 06492.

### INTERNAL MEDICINE

Internist or Family Practitioner to associate with same in Manchester, CT. 40 hours per week, high salary, no expenses other than malpractice insurance and BC/BS. Call 646-1900 for appointment.

Internal Medicine Practice and Building for sale. Newly renovated, fully equipped. Call (203) 521-1611 or 233-6343.

ONCOLOGIST/HEMATOLOGIST. Central Connecticut suburban setting in rapidly expanding community. UConn and Yale Medical Centers easily accessible. Excellent community hospital with a wide range of ancillary services. Medical Staff of General/Family Practitioners and multiple specialties. Financial assistance provided. Write: Director, Bradley Memorial Hospital, Meriden Ave., Southington, CT 06489; or call 203-621-3661 Ext. 331.

### OBSTETRICS & GYNECOLOGY

Young, board certified or eligible to join established group by July, 1982, South Eastern Connecticut. Send curriculum vitae to CSMS/OB-GYN:FRB.

### PEDIATRICS

Excellent opportunity for a well qualified Pediatrician to practice in a very desirable area. Close to teaching hospitals. Terms negotiable. Write: CSMS:PED/JM, (to be forwarded).

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### FAMILY PRACTICE

Immediately available. Age 39. Connecticut License. MD, Univ. Hospital, Wales, England; Int., S.U.N.Y. at Stony Brook; Res., South Nassau Hospital (SUNY affiliated). FLEX; AB elig. Solo, group, assoc. or institutional practice in medium community—Fairfield County preference. Write: S. David Kogut, M.D., 108 John St., Garden City, NY 11530.

### INDUSTRIAL MEDICINE

July '82. Age: 35. Licensed in Connecticut. MD, LMCC (Canada); Int. and Res., St. Mary's Hospital and The Whittington Hospital, London, England. 5 years of private practice (Family Practice), Ontario, Canada; British Rail—Industrial Medicine. Hartford—Farmington area preferred. Contact: Paul B. West, M.D., 44 Harvey Road, Guildford, Surrey, England CU1 3SE.

### INTERNAL MEDICINE

INFECTIOUS DISEASES. July '82. Age 33. MD, Catholic Univ. of Louvain, Belgium; Int., St. John Hospital, Detroit; Res., Baystate Medical Center, Springfield, MA; Fellowship, Infectious Diseases at Brown Univ., Providence, RI. FLEX. AB cert. Large group, assoc. or institutional practice preferred with emphasis on infectious diseases. Write: Louis A. Schenfeld, M.D., 369 Morris Ave., Providence, RI 02906.

CARDIOLOGIST. Jan. '82. Age 31. Presently in practice. Connecticut license. Nat'l bds.; AB cert.; MD, NY Univ.; Int. & Res., Brookdale Hosp. Center; Fellowship, Medical College of Georgia. Medium, solo, group or institutional practice preferred. Write: Jay I. Kipoff, M.D., 214 E. Spooner Rd., Milwaukee, WI 53217.

July '82. Age: 28. Nat'l bds; AB cert.; MD, Loyola Univ./Stritch School of Medicine; Int. and Res., Beth Israel Hospital, NY City; Fellowship, George Washington University. Group, assoc. and institutional practice preferred in medium to large community. Some Endocrinology preferred and/or association with a teaching institution. Write: Jonathan R. Anolik, M.D., 6107 Breezewood Court, # 203, Greenbelt, MD 20770.

## INTERNAL MEDICINE—Continued

July '82. Age: 29. Nat'l bds; AB cert.; MD, New York Medical College; Int. and Res., Long Island Jewish-Hillside Medical Center; Fellowship, Chief Resident, Internal Medicine; Endocrinology, George Washington Univ. Medical Center. Wishes to practice Internal Medicine with potential to develop Endocrinology practice in large to medium group, assoc. or institutional practice. Write: CSMS, IM/EK.

CARDIOLOGIST. July '82. Age: 29. AB elig.; MD, Osmania Medical College, India; Int. and Res., St. Johns Episcopal Hospital, Brooklyn, NY; Fellowship, The Washington Univ. School of Medicine. Trained in all aspects of Cardiology. Solo, group or assoc. practice. Write: T.M. Gupta, M.D., 8093 Valcour Ave., St. Louis, MO 63123.

CARDIOLOGY. July '82. Age: 27. Nat'l bds. AB cert. MD, New York Medical College; Int., Res. and Fellowship, Beth Israel Medical Center, NYC. Group or associate practice preferred. Write: Harold S. Wilkes, M.D., 350 East 17th St., Apt. 9D, New York, NY 10003.

ENDOCRINOLOGY AND DIABETES. July '82. Age: 29. Nat'l bds. AB cert. MD, University of Pennsylvania; Int. and Res., Albany Medical Center; Fellowship, Montefiore Hospital and Medical Center. Medium to large, group or assoc. practice. Write: CSMS/IM:KWO.

## NEUROLOGY

Available immediately. Age: 45. Licensed in Connecticut. Presently in practice. Nat'l bds; AB cert.; M.D., Albany Medical College; Int., Washington Univ. Medical Service; St. Louis City Hospital; Res., Barnes Hospital, Washington Univ. Medical Center; Fellowship, Mt. Sinai, NY and Albert Einstein Medical Center. Prefers medium, solo practice but is flexible. Write: CSMS: NEUR/RC.

July '82. Age 33. MD, Univ. of Bologna, Italy; Int., Nassau Hospital, NY; Res., Univ. of Miami/Jackson Memorial Hosp., Miami. AB cert. Solo, group or assoc. practice in medium size community desired. Write: CSMS: NEUR/JM.

## OBSTETRICS/GYNECOLOGY

July '82. Age 31. MD, NJ College of Medicine; Int., Brooke Army Med. Center; Res., Women and Infants Hospital, Providence, RI. Nat'l bds; AB elig. Especially interested in infertility and reproductive endocrinology. Solo or group practice. Write: Myles E. Dotto, M.D., 44 Lyndhurst Ave., Providence, RI 02908.

Oct. '81. Age: 39. Presently in practice. FLEX. AB elig.; MD, Univ. of The Philippines; Int., Coney Island Hospital; Res., Maimonides Medical Center, NY; Fellowship, Coney Island Hospital, NY. Group, assoc. or institutional practice preferred. Write: CSMS: OBGYN/ES.

## OPHTHALMOLOGY

July '82. Age: 32. Presently in practice. Nat'l bds. AB cert. MD, Univ. of Vermont Medical College, Burlington; Int., Brooke Army Medical Center, San Antonio, TX; Res., Walter Reed Army Medical Center, Washington, DC. Small, medium practice with solo, group, assoc. or institutional. Write: R. Jeffrey Bergquist, M.D., 73 Apple St., De Ridder, LA 70634.

July '82. Age: 30. Connecticut License. MD, Universidad Autonom de Guadalajara, Mexico; Int., Fifth Pathway and Long Island College Hosp., Brooklyn, NY; Res., Univ. of Tenn. Clinical Ed. Ctr. and Baroness Erlanger & T.C. Thompson Children's Hospital, Chattanooga, TN; Fellowship, Tufts New England Medical Ctr., Boston, MA. Solo, group or assoc. practice preferred. Write: Charles D. Howard, M.D., 2605 Stearns Hill Rd., Waltham, MA 02154.

## ORTHOPEDIC SURGERY

July '82. Age: 28. Nat'l bds; AB elig.; MD, Creighton Univ.; Int. and Res., Univ. of Michigan Hospital. Group or associate practice in small to medium community. Write: Cary Skolnick, M.D., 2250 N. Circle Drive, Ann Arbor, MI 48103.

## PATHOLOGY

Three months notice. Age: 49. Currently in practice. AB cert. MD, Yonsie Univ. School of Medicine, Korea; Int. and Res., Memorial Hospital, RI. Solo, group, assoc. or institutional practice preferred. Willing to work as a full-time pathologist or as a combination of part-time pathologist and part-time general practitioner. Write or call, Won Pil Chung, M.D., 2 University Place, Orono, ME 04473, 207-866-2578.

## PEDIATRICS

Available immediately. Age 46. MD, Buenos Aires Med. School; Int., New England Hospital for W; Res., Sinai Hosp.; Fellowship, Metropolitan Hosp. Presently in practice. AB elig. Group and/or assoc. medium practice. Write: CSMS, PED/JT.

Oct. '81. Age: 32. Connecticut License. Nat'l bds; AB cert.; MD, Tuft's Medical School; Int. and Res., Rhode Island Hospital, Providence, RI. Presently in practice. Group or institutional practice preferred. Write CSMS PED/BS.

Oct. '81. Age: 29. Connecticut license. FLEX. AB elig. MD, Univ. of Tennessee; Int. Univ. of Louisville; Res., Univ. of Connecticut. Prefers part-time, night call, clinical work, hospital based, Pediatric Emergency Room or industrial practice. Write: Stanley E. Whittenburg, M.D., 15 Charter Oak Place, Hartford, CT 06106.

## RADIOLOGY

DIAGNOSTIC RADIOLOGY. July '82. Age: 29. Licensed in Connecticut. Nat'l bds. AB elig. MD, Albany Medical College, Albany, NY; Int., Greenwich Hospital, Greenwich, CT; Res., Hartford Hospital, Hartford, CT. Prefers group practice. Contact: Jeffrey D. Blonstein, M.D., 29A Arnold Way, West Hartford, CT 06119.

## SURGERY

July '82. Age: 31. Nat'l bds. Ab elig. MD, Univ. of Chicago, Pritzker, Chicago, IL. Int. and Res., State Univ. of NY Upstate Med. Center, Syracuse, NY; Fellowship, Baystate Med. Center, Springfield, MA (Periph Vascular). Group, assoc. or institutional practice in medium size community preferred. Write: Joel A. Berman, M.D., 35C Father Kolbe Dr., Holyoke, MA 01040.

PLASTIC SURGERY. Date available negotiable. Presently in practice. Age: 41. AB cert. MD, Ohio State Univ. Int. and Res., Akron City Hospital, Akron, OH; Fellowship, St. Louis University, St. Louis, MO. Solo or assoc. practice in medium size community preferred. Write: Denis J. Winder, M.D., 980 N. 2100W, Vernal, Utah 84078.

August '82. Age: 30. Nat'l bds. AB elig. MD, University of Puerto Rico. Int. and Res., S.U.N.Y. at Stonybrook; Fellowship, Allentown & Sacred Heart Hospital Center, Allentown, PA. Would like to practice both General/Vascular Surgery but will strongly consider a position in Vascular Surgery alone. Prefer group or assoc. type practice. Write: Ruben J. Delgado, M.D., Spring Ridge M-26, Whitehall, PA 18052.

## UROLOGY

Available immediately. Age 31. Nat'l bds; AB elig. MD, The M.S. Univ. of Baroda, India; Int. and Res., The Maimonides Med. Center, Brooklyn; Fellowship, The Hospital for Sick Children, Toronto, Canada. Solo, group, assoc. or institutional practice preferred. Write: Dilip R. Patel, M.D., 483 Ocean Pkwy. #4-B, Brooklyn, NY 11218.

Available immediately. Age: 50. Presently in practice. AB cert.; MD, University of Naples Medical School, Naples, Italy; Int. Fort Sanders Presb. Hospital, Knoxville, TN; Res., St. Sacrement Hospital, Quebec and NY Medical College. Solo, group or assoc. practice. Write: Alessandro Colalillo, M.D., P.O. Box 68, Freeport, IL 61032.

**PSYCHIATRISTS**

WATERBURY HOSPITAL is a 500 bed Yale affiliated teaching hospital. The hospital's Division of Psychiatry has Part Time and Full Time Clinical and Administrative positions available.

The CLINICAL POSITIONS are for Full Time and Part Time Staff Psychiatrists to act as consultants to full service teams offering in-patient, partial hospitalization and out-patient treatments. These positions are designed for individuals whose backgrounds and interests include neuropsychiatric diagnosis, psycho-pharmacology and individual, family, group and milieu therapy.

The ADMINISTRATIVE POSITION is for a Senior Clinician to assist in the planning, supervision and implementation of program. Requires individual with excellent clinical skills plus ability to administer, supervise and teach.

These are excellent opportunities in a dynamic, innovative psychiatric facility with a commitment to service AND teaching. Competitive salary and benefit program. Send curriculum vitae to:

Irwin M. Greenberg MD., DMSc
Director of Psychiatric Services

**WATERBURY HOSPITAL**
**HEALTH CENTER**
**64 Robbins Street**
**Waterbury, Connecticut 06721**

OR CALL

John Kelleher, MD
(203) 573-7174

**An Equal Opportunity**
**Affirmative Action Facility**

**CLASSIFIED ADVERTISING RATES**

$40.00 for 25 words or less; 50 cents for each additional word.

$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.

No agency commission on classified advertising.

Closing date: Copy must be received by the first day of month preceding month of issue.

A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

---

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE.* The *JOURNAL* does not hold itself responsible for statements made by any contributor.

REPRINTS are available at an established schedule of costs. A reprint rate and order form is sent to the author with his page proofs.

ALTHOUGH all advertising material accepted is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to: *CONNECTICUT MEDICINE,* 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

*CONNECTICUT MEDICINE* is the official publication of the Connecticut State Medical Society, a voluntary non-profit association organized for scientific and educational purposes, published monthly for members of the Connecticut State Medical Society.

# Leukocyte-Poor Red Blood Cells (Washed) Prevent Transfusion Reactions

GREGORY J. PALERMO, M.D. AND JOSEPH R. BOVE, M.D.

**ABSTRACT—Over two years 3,876 units of leukocyte-poor red blood cells and 41,565 of non-washed red blood cells and whole blood were administered. The incidence of allergic and febrile transfusion reactions was lower (0.39%) in the leukocyte-poor group than in the non-washed group (1.01%). Both allergic and febrile reactions were reduced in the patients receiving washed red blood cells.**

It has long been recognized that febrile transfusion reactions in patients with leukocyte antibodies can be prevented by removal of leukocytes from the donor unit before transfusion.[1] Perkins and his colleagues found a correlation between the number of incompatible leukocytes transfused and the temperature elevation.[2] No patient in their study had a temperature elevation of more than 1°C with transfusion of fewer than $0.25 \times 10^9$ incompatible leukocytes. Six of seven patients required more than $0.5 \times 10^9$ to cause fever of 1°. Subjective symptoms occurred only after a larger dose of leukocytes, and usually were associated with a temperature rise of 2°C or more. A previous study at this institution[3] has demonstrated that leukocyte-poor red blood cells (LPRBC) containing $0.32 \pm 0.11 \times 10^9$ leukocytes can be produced with two washing cycles on the IBM 2991 Blood Cell Processor. It is reasonable to predict, therefore, that patients transfused with such a product should yield a very low incidence of febrile transfusion reactions caused by leukocyte antibodies.

Febrile transfusion reactions caused by plasma components can also be prevented by washing.[4] However, most reactions to plasma are allergic, and at least some of these also can be prevented by washing. For example, Vyas and his colleagues prevented anaphylactoid reactions in a patient with anti-IgA by transfusing washed cells.[5] Thus, the use of LPRBC should also prevent most reactions related to plasma factors.

Because of previously cited studies it is logical to assume that patients transfused with LPRBC will have fewer transfusion reactions than those who receive red blood cells or whole blood. This assumption has been tested only on small groups of patients.[6-10] The use of LPRBC for prevention of transfusion reactions has never been compared with the use of non-washed blood products in the routine practice of a large hospital transfusion service. Because of the cost and complexity of preparing LPRBC, their efficacy in practice ought to be documented before widespread acceptance of this more costly blood component. For this reason we studied the effect of using LPRBC prepared on the IBM Blood Cell Processor on the incidence of non-hemolytic transfusion reactions at Yale-New Haven Hospital over a period of two years.

## Materials and Methods

All reported transfusion reactions occurring at Yale-New Haven Hospital between January 1, 1978 and December 31, 1979 were studied retrospectively. All patients had been investigated immediately after reaction to rule out red blood cell incompatibility and hemolysis. In addition, the clinical charts of all patients had been seen and evaluated by a blood bank physician, usually within 24 hours of the reaction. Reactions were classified as allergic if hives, wheezing, rash, or other allergic phenomena were observed without fever elevation greater than 2°F; febrile if fever and/or chills were present without such signs or symptoms; and febrile-allergic if fever elevation of more than 2°F accompanied allergic manifestations.

Leukocyte-poor red blood cells were produced from whole blood or red blood cells with the IBM 2991 or 2991[2] Blood Cell Processor. A "two-cycle" wash was performed, using a red cell override of 3.2 or 3.5 seconds.[3] During this period LPRBC were routinely transfused to all patients with a history of a least two febrile or severe allergic transfusion reactions. In addition, most transfusions to transplant candidates, patients with red-cell-antibody problems, or multiply-transfused outpatients such as thalassemics, were of LPRBC.

---

GREGORY J. PALERMO, M.D., Assistant Director, American Red Cross, Blood Services, Connecticut Region, Farmington, CT and Assistant Professor of Laboratory Medicine, University of Connecticut School of Medicine. JOSEPH R. BOVE, M.D., Director, Blood Bank, Yale New Haven Hospital and Professor of Laboratory Medicine, Yale University School of Medicine.

TABLE
INCIDENCE OF TRANSFUSION REACTIONS

| | *Number units transfused* | *Febrile reactions number (%)* | *Allergic reactions number (%)* | *Febrile-allergic reactions, number (%)* | *Reactions, all kinds number (%)* |
|---|---|---|---|---|---|
| NWU | 41,565 | 277 (0.67) | 129 (0.31) | 15 (0.04) | 421 (1.01) |
| LPRBC | 3,876 | 11 (0.28) | 4 (0.10) | 0 (0) | 15 (0.39) |

## Results

Between January 1, 1978 and December 31, 1979, 45,959 units of blood were transfused. Four hundred fifty-three non-hemolytic transfusion reactions were reported (0.99% of transfused units). Of these, 436 were febrile, allergic, or febrile-allergic (0.95%). There were 288 febrile reactions (0.63%), 133 allergic reactions (0.29%), and 15 febrile-allergic reactions (0.03%).

Of the 45,959 units of blood transfused, 3,876 were LPRBC and 518 were frozen-deglycerolized red blood cells. The other 41,565 non-washed units (NWU) were either whole blood or red blood cells. Febrile, allergic, or febrile-allergic reactions occurred with 421 (1.01%) of NWU transfusions and in 15 (0.39%) of LPRBC transfusions ($\chi^2 = 14.9$, $\alpha < 0.005$, Table). Febrile reactions were observed with 0.67% of NWU transfusions and with 0.28% of LPRBC transfusions ($\chi^2 = 8.7$, $\alpha < 0.005$). Allergic reactions were seen with 0.31% of NWU transfusions and with 0.10% of LPRBC transfusions ($\chi^2 = 5.5$, $\alpha < 0.025$). Febrile-allergic reactions were observed only with NWU transfusions.

No transfusion reaction was reported to any of the 518 units of frozen-thawed red cells transfused in 1978 and 1979.

## Discussion

Febrile, allergic, or febrile-allergic transfusion reactions were observed in 0.39% of LPRBC transfusions as opposed to 1.01% of non-washed unit transfusions. The difference is statistically significant. The reduction in reactions is seen in both febrile and allergic types.

The difference in reaction rates between the LPRBC and non-washed group is really more striking than the numbers alone indicate. Patients who had had two previous reactions were routinely given LPRBC; the likelihood of reactions in that group was thereby increased, while the likelihood of reactions in the NWU group was decreased.

Unfortunately we have no way of knowing just how many patients in the LPRBC group would have had reactions if transfused with non-washed cells. Thus we cannot say with certainty how many reactions were prevented and cannot calculate the cost per reaction prevented. Unquestionably it is expensive since washing each unit costs at least $20.00, and only a small proportion of those washed actually would have caused a reaction. Meryman and colleagues have suggested that alternative and less costly procedures do remove granulocytes from stored whole blood and red blood cells.[11] Such products may prevent most transfusion reactions, as well, although neither we nor Meryman have data to support or refute this possibility.

We believe that LPRBC, no matter how prepared, is a useful component that adds comfort, and perhaps safety, to transfusion practice. But with the high costs involved, LPRBC should be used judiciously. In this institution LPRBC are used for the prevention of transfusion reactions in patients who have had two previous reactions, for patients with complex red-cell-antibody problems in order to clarify the etiology of any possible transfusion reaction, for the prevention of transfusion reactions in multiply-transfused outpatients in order to facilitate patient flow in the clinics, and for some renal transplant candidates.

We conclude that washing blood products with the IBM 2991 Blood Cell Processor is an effective method of reducing, but not eliminating, non-hemolytic transfusion reactions in selected patients.

## REFERENCES

1. Dausset J, Fonseca A, and Brecy H: Elimination de certains chocs transfusionnels par l'utilisation de sang appauvri en leucocytes. Vox Sang 2:248-256, 1957
2. Perkins HA, Payne R, Ferguson J, and Wood M: Non-hemolytic febrile transfusion reactions. Quantitative effects of blood components with emphasis on isoantigenic incompatibility of leukocytes. Vox Sang 11:578-600, 1966
3. Buchholz DH. Charette JR, and Bove JR: Preparation of leukocyte-poor red blood cells using the IBM 2991 blood cell processor. Transfusion 18:653-662, 1978
4. Dameshek W and Neber J: Transfusion reactions to a plasma constituent of whole blood. Their pathogenesis and treatment by washed red blood cell transfusions. Blood 5:129-147, 1950
5. Vyas GN, Perkins HA, and Fudenberg HH: Anaphylactoid transfusion reactions associated with anti-IgA. Lancet 2:312-315, 1968
6. Greenwalt TJ, Gayewski M, and McKenna JL: A new method for preparing buffy coat-poor blood. Transfusion 2:221-229, 1962
7. Cassell M, Phillips DR, and Chaplin H: Transfusion of buffy coat-poor red cell suspensions prepared by dextran sedimentation: description of newly designed equipment and evaluation of its use. Transfusion 2:216-220, 1962
8. Diepenhorst P, and Engelfriet CP: Removal of leukocytes from whole blood and erythrocyte suspensions by filtration through cotton wool. Vox Sang 29:15-22, 1975
9. Dorner I, Moore JA, Collins JA, Sherman LA, and Chaplin H: Efficacy of leukocyte-poor red blood cell suspensions preparec by sedimentation in hydroxyethyl starch. Transfusion 15:439-448, 1975
10. O'Connor Wooten MJ: Use and analysis of saline washed red blood cells. Transfusion 16:464-468, 1976
11. Meryman HT, Bross J, and Lebovitz R: The preparation of leukocyte-poor red blood cells: a comparative study. Transfusion 20:285-292, 1980

# Esophago-Pulmonary Toxicity from Concomitant Use of Adriamycin and Irradiation

YUNG H. SON, M.D. AND DANIEL S. KAPP, PH.D., M.D.

**ABSTRACT—Concomitant cyclic 3-drug (cytoxan, vincristine, adriamycin) chemotherapy and irradiation have proven efficacy for limited stage small cell undifferentiated carcinoma of the lung.**

**However, there has been a rising concern for enhanced esophago-pulmonary-myocardial toxicity due to the synergism between adriamycin and irradiation.**

**The authors report three cases of severe esophagitis, pneumonitis and subsequent pulmonary fibrosis following the combination regimen.**

**We stress that concomitant use of the drug and irradiation should be avoided and the interval between the two modes should be preferably longer than one week.**

Adriamycin (doxorubicin hydrochloride) is a DNA intercalating anthracycline antibiotic which inhibits DNA dependent RNA repair mechanism. Since the early 1970s, it has been widely used either as a single agent or as part of multiagent chemotherapy in the treatment of such tumors as malignant lymphomas, breast carcinoma, bone or soft tissue sarcomas and small cell undifferentiated lung carcinoma.[3]

Radiation reaction augmentation phenomenon as a result of concomitant or sequential use of chemotherapeutic agents has been well recognized.[15] Recall phenomenon of cutaneous radiation reaction by actinomycin D has been widely known since the late 1950s.[6] Likewise, the interaction between irradiation and adriamycin has also been observed since the early 1970s.[4-8, 14] Adriamycin per se has shown to potentiate radiation damage not only to the skin but to the hematopoietic organs, myocardium, esophagus and broncho-alveoli.[1, 2, 4, 5, 9, 10, 13, 14, 18]

When adriamycin is combined with irradiation, the esophagus may undergo severe inflammatory reaction manifested by spasm, stricture, necrotizing ulceration, perforation or stenosis due to the radiation sensitizing properties of the drug.[3, 7, 10] Similarly, broncho-alveolar tissues undergo an acute exudative pneumonic process usually beginning a few weeks after the onset of esophagitis. The relatively long cell turn-over time of broncho-alveolar epithelium may partially account for the less dramatic and slower expression of damage as compared to the gastrointestinal mucosal epithelium.[7]

Thus, the potential risk of enhancement of radiation injury is anticipated when multimodality treatment includes adriamycin.

We recently witnessed severe irreversible pulmonary fibrosis and intractible but reversible esophagitis in three cases of small cell undifferentiated carcinoma of the lung treated with concomitant large fraction irradiation and adriamycin along with cytoxan and vincristine.

## Case Reports

Case 1: A 59-year old male presented a right upper lobe bronchial lesion (Figure 1-a). Biopsy of the lesion showed small cell undifferentiated carcinoma. Metastatic work-up was negative. The patient was considered to have a limited stage disease. The left ventricular ejection fraction was 54%. He received radiation therapy to the mediastinum and both supraclavicular regions plus CNS prophylactic irradiation of 3000 rads each at 300 rads per fraction, 5 fractions per week. Concomitantly, he received the first cycle of cytoxan 1 gm/M$^2$, vincristine 1 mgm/M$^2$ and adriamycin 40 mgm/M$^2$ I.V. on Day 1 and repeated at 3 week intervals.

Within a week of treatment, the patient began to experience esophagitis manifested by burning and pain on swallowing. He also experienced left shoulder pain unrelieved by Indocin 150 mgm a day. By the end of the 10th week, he became progressively dyspneic, markedly weak with intermittant mental confusion and staggering gait. Mental confusion persisted despite normal brain and CT scans. Chest film showed fulminant paramediastinal pneumonitis corresponding to the irradiation field (Figure 1-b). PO$_2$ was 69 with nasal oxygen.

---

YUNG H. SON, M.D., Associate Professor and DANIEL S. KAPP, Ph.D., M.D., Assistant Professor both from the Department of Therapeutic Radiology, Yale University School of Medicine and Attending Physician at Yale-New Haven Hospital.

This report is partly supported by Grant CA06519-18 from the National Cancer Institute, National Institutes of Health.

One month after the third cycle of chemotherapy his cardiac ejection fraction was 57%. At the end of the 19th week, streaking densities began to localize in the upper mediastinum (Figure 1-c). The patient was kept on Prednisone 80 mgm a day. The planned six cycles of chemotherapy was cut short to five. The patient is currently recurrence-free but with some respiratory difficulty at nine months. He is scheduled to recieve Hexamethylmelamine therapy. Mediastinal fibrosis has remained unchanged throughout the follow-up films.

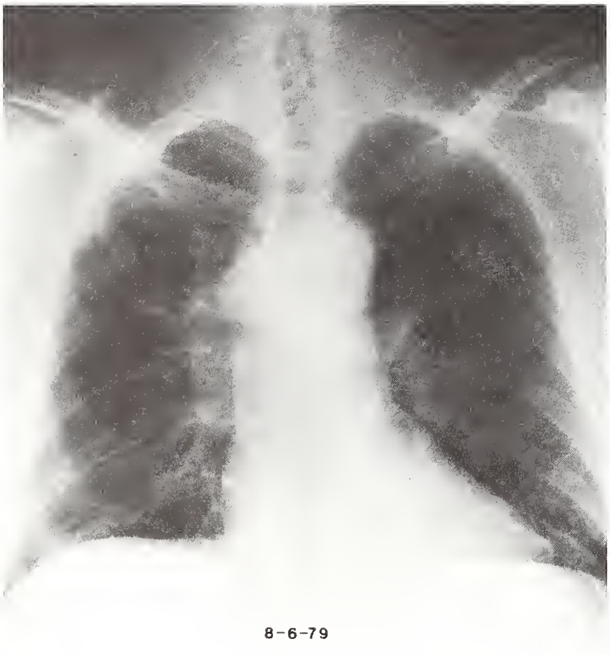


Figure 1-a
Pre-treatment chest film shows right hilar and para-hilar masses.

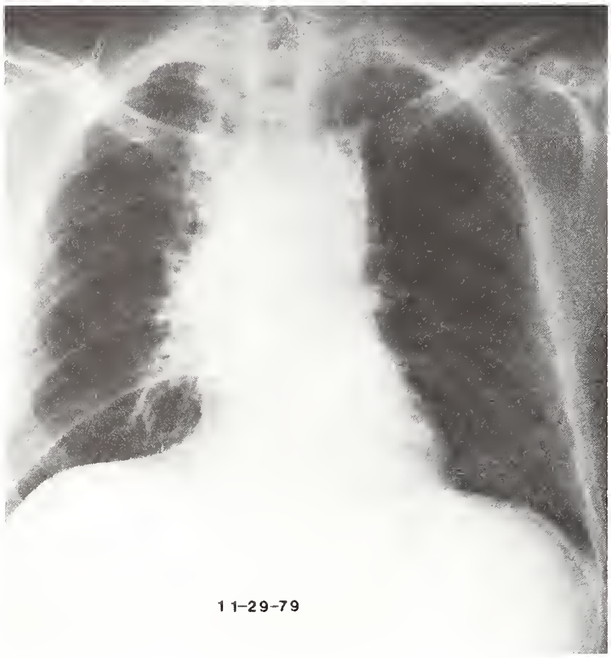


Figure 1-b
Irradiation-adriamycin related pneumonitis in the mediastinum at 11th week of combined treatment.

Case 2: A 46-year old male presented progressive dyspnea, chest pain with right hilar mass on chest film. Bronchoscopy revealed severe narrowing and mucosal irregularity in the intermediate bronchus. Biopsy showed small cell undifferentiated carcinoma. Initial chest film showed right pleural effusion and right lower lobe infiltration (Figure 2-a). Metastatic work-up was completely negative. He began to receive irradiation to the mediastinum and both supraclavicular regions of 3000 rads at 300 rads per fraction concomitantly with cytoxan 1.9 gm, vincristine 1.9 mgm and adriamycin 75 mgm given I.V. on Day 1. Within two weeks of combination treatment, the

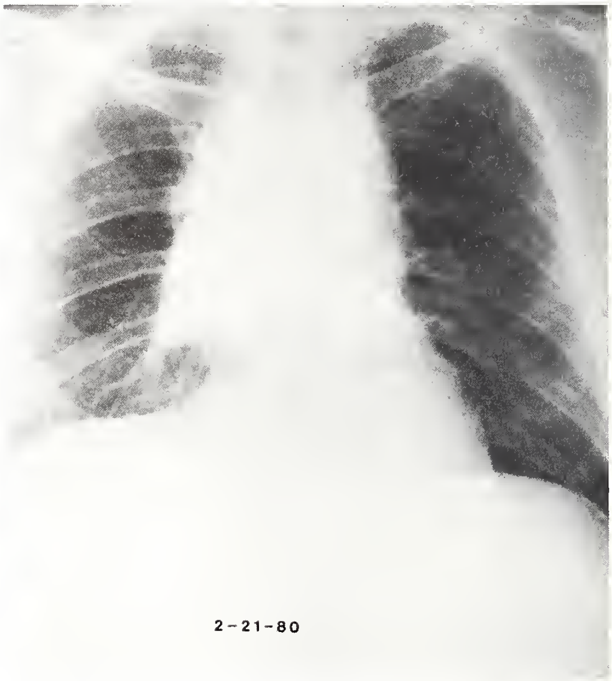


Figure 1-c
Advanced mediastinal fibrosis at 6 months.

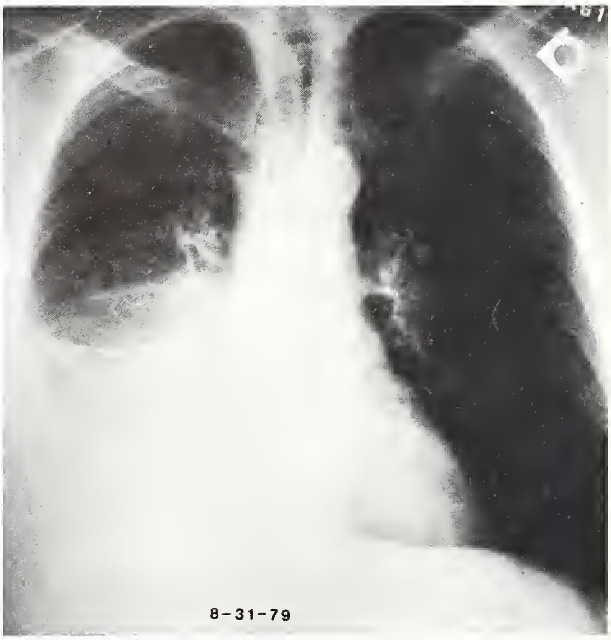


Figure 2-a
Pre-treatment chest film shows right hilar lesion, right lower lobe atelectasis and pleural effusion.

patient became dysphagic with persistent low grade fever. Esophagram demonstrated severe esophageal stricture (Figure 2-b). At four weeks following the second cycle of chemotherapy, he became totally dysphagic, mentally confused with occasional twitching motions. Chest film showed fine nodular perihilar densities (Figure 2-c). He became extremely dyspneic by the 10th week. Chest films repeatedly showed paramediastinal interstitial pneumonic picture (Figure 2-d). For this reason, further adriamycin therapy was discontinued and it was replaced with methotrexate 50 mgm for the remaining 4 cycles. At three months following the onset of treatment, he was given CNS prophylactic irradiation of 3000 rads in 10 fractions. The patient is currently on bi-monthly Hexamethylmelamine 500 mgm and VP-16 (epipodophyllotoxin) 300 mgm. He remained recurrence-free for eight months but unfortunately failed with liver metastases at nine months.

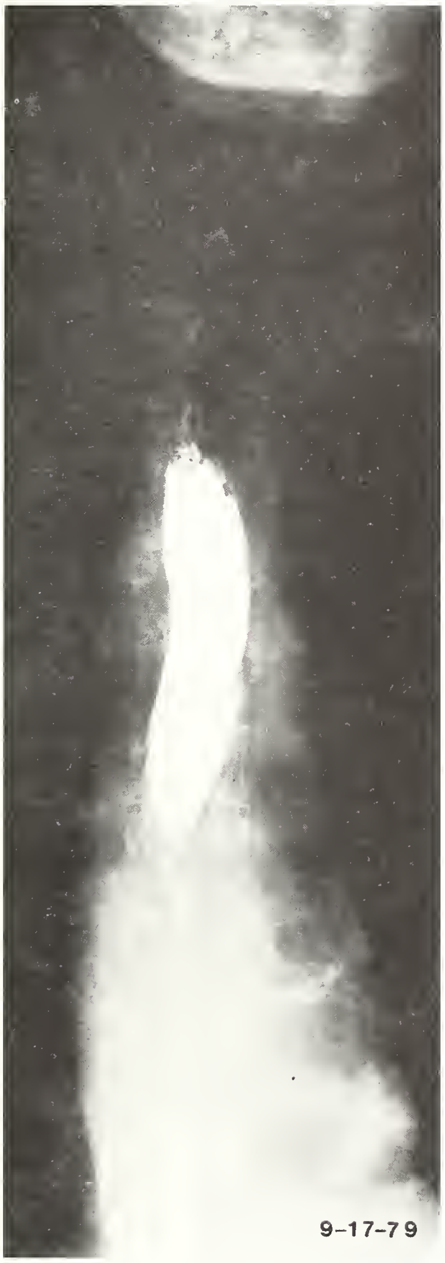


Figure 2-b
Four days after the completion of mediastinal irradiation of 3000 rads with concomitant chemotherapy, severe esophagitis with stricture became evident on esophagram.

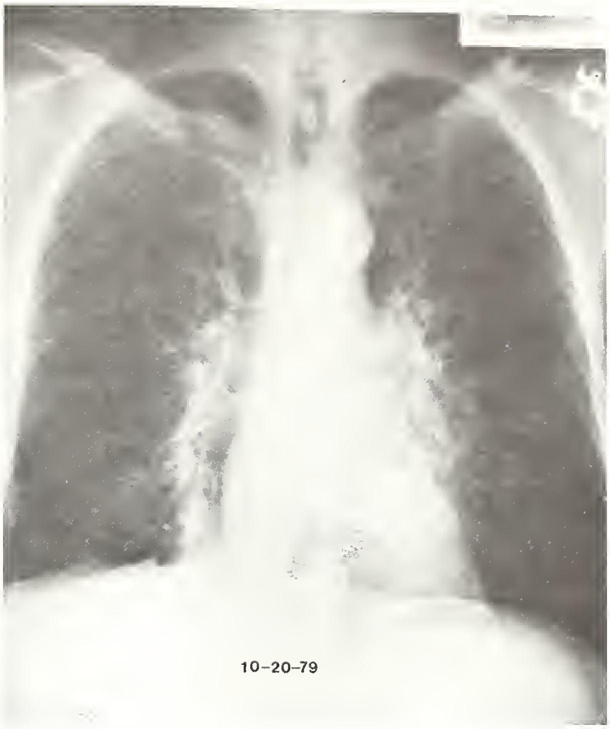


Figure 2-c
Bilateral peri-hilar pneumonitis at the end of 5th week following mediastinal irradiation.

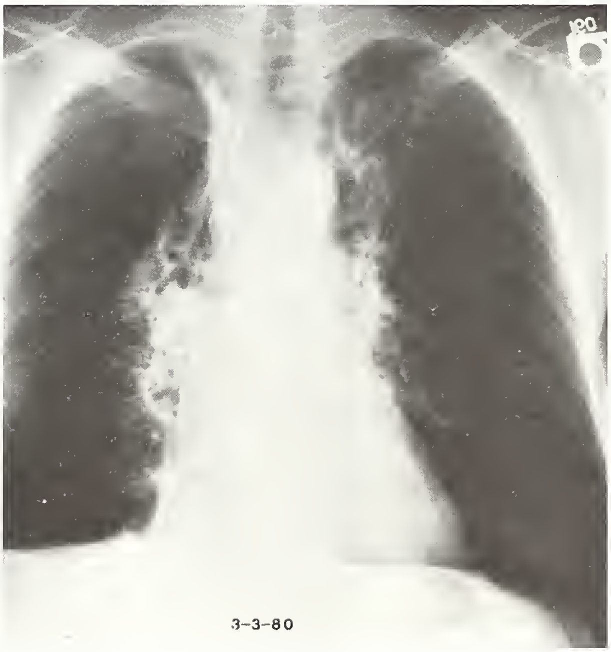


Figure 2-d
At 6 months from the onset of treatment, marked mediastinal fibrosis became evident.

Case 3: A 62-year old male developed a right upper lobe mass, mediastinal involvement and CT scan evidence of a right frontal lesion.

Mediastinoscopy-biopsy was positive for polygonal oat cell carcinoma. Liver-spleen and bone scans were negative. He received mediastinal and brain irradiation of 3000 rads each in 10 fractions. Within a few days, he was started on the 3-drug regimen plus several doses of CCNU.

Within four weeks of chemotherapy, he developed severe pneumonitis (Figure 3-a). Ten months later, he developed occlusion of the subclavian, innominate veins and superior vena cava (Figure 3-b) of which he died in six weeks.

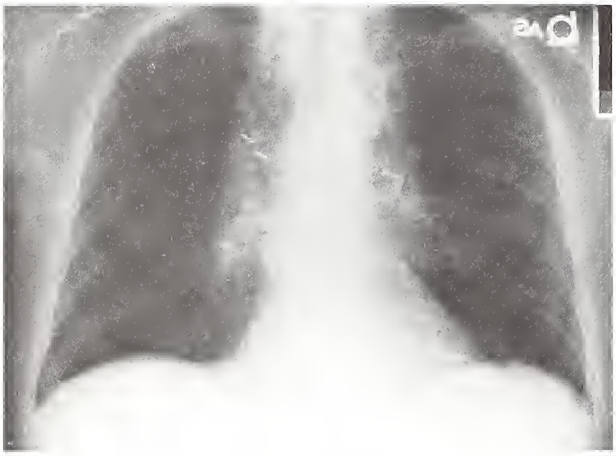


Figure 3-a
Bilateral pneumonitis clearly defining irradiation port within 4 weeks of chemotherapy.

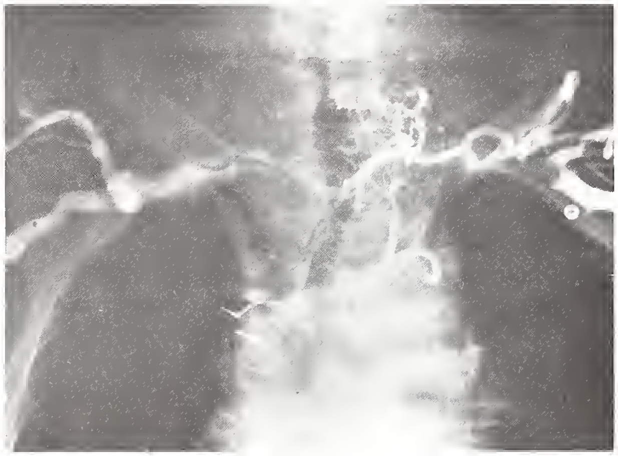


Figure 3-b
Ten months following chemotherapy the upper mediastinum was encased by a solid density with the occlusion of subclavian, innominate veins and superior vena cava.

## Discussion

A combination of radiation therapy to the primary lesion, CNS prophylaxis and concomitant cyclic 3-drug (cytoxan, vincristine and adriamycin) chemotherapy has shown encouraging initial results with actuarial survivals of 70 and 75% at 15 months in the treatment of limited stage small cell undifferentiated carcinoma of the lung.[11, 12]

However, significant toxicity with these treatment regimes have been noted. Kent et al observed post irradiation pulmonary fibrosis in two of 31 cases (6%). In addition, an alarmingly high incidence of esophagitis of moderate to severe degrees was observed in 21 patients (68%). Nine patients required nasogastric tube feeding. Three of the 21 cases eventually manifested serious esophageal stricture requiring remedial interventions.[12]

Greco et al on the other hand, did not encounter lung toxicity in the 32 cases treated with the combination of irradiation and cyclic 3-drug chemotherapy. Interestingly, none of their cases demonstrated severe esophagitis leading to esophageal stricture, although mild to moderate esophagitis occurred in 18 of 32 patients and two patients required intravenous fluids for short periods.[11]

The timing of the irradiation and adriamycin appears to be crucial with respect to the development of adverse esophageal, cutaneous and pulmonary interactions. Chabora et al encountered severe esophagitis in eight of the 22 cases treated with concomitant cyclic COMA (cytoxan, vincristine, methotrexate and adriamycin) regimen plus irradiation for small cell undifferentiated lung carcinoma.[5] They claimed that the 60% (8 of 13) incidence of esophagitis was reduced to 0% (0 of 9) by delaying the onset of chemotherapy by three weeks. Aristizabal et al reported four cases of abnormally severe skin reactions in the irradiation field in patients subjected to concurrent adriamycin and cytoxan following mastectomy for breast cancer. No untoward skin reactions were noted, however, in the 14 patients whose chemotherapy was delayed until seven days after the completion of irradiation.[2]

Several animal studies have been undertaken in attempts to clarify adriamycin-irradiation interactions. Redpath et al demonstrated that the potentiation by adriamycin of irradiation-induced pulmonary damage in mice was diminished when the drug was given seven days after irradiation as opposed to 24 hours before or after irradiation.[16] In contrast, however, Steel et al demonstrated a potentiation of irradiation-induced pulmonary or cardiac toxicity by the administration of high doses of adriamycin 2 weeks prior to single doses of lung irradiation in mice.[17] Clearly, additional studies are needed to determine the optimal scheduling of adriamycin and radiation therapy in order to minimize the potential danger of debilitating and life-threatening esophageal and pulmonary toxicity.

In summary, three cases of severe esophatitis and pulmonary fibrosis are reported following the concomitant use of adriamycin and irradiation in the treatment of limited stage (except for case 3) small cell undifferentiated carcinoma of the lung. In all cases, the onset of esophagitis was observed as early as the first and second week. Radiographically demonstrable pneumonitis began to appear in the 10th week and from then on steadily progressed to fibrotic change. Because of the side effects, two of the three patients were unable to complete the planned six cycles of chemotherapy. Although our experience with such side effects in three successive cases may be fortuitous, we are alarmed enough to reassess the timing as well as the doses of the regimen. We are now delaying the first dose of adriamycin for at least one week after the pulmonary irradiation.

POSTSCRIPT—While this manuscript was in preparation, we encountered one additional case of severe radiation pneumonitis and esophagitis which appeared in 4 days following 3000 rads irradiation. His mediastino-supraclavicular irradiation was preceded by 4 cycles of cyclophosphamide, adriamycin and vincristine. He is currently free of local recurrence or distant metastasis but he remains symptomatic from pulmonary fibrosis.

## REFERENCES

1. Ali MK, Soto PA, Maroongroge D, Bekheit-Saad S, Buzdar AV, Blumenschein GR, Hortobagyi GN, Tashima CK, Wiseman CL, and Shullenberger CC. Electrocardiographic changes after Adriamycin chemotherapy. Cancer 43:465-471, 1979
2. Aristizabel SA, Miller RC, Schlichtemeir AL, Jones SE, and Boone MLM. Adriamycin-irradiation cutaneous complications. Int J Rad Oncol Biol Phys 2:325-331, 1977
3. Blum RH, and Carter SK. Adriamycin. A new anti-cancer drug with significant clinical activity. Ann Int Med 80:249-259, 1974
4. Cassady JR, Richter MP, Piro AJ, and Jaffe N. Radiation-adriamycin interactions; Preliminary clinical observations. Cancer 36:946-949, 1975
5. Chabora BM, Hopfan S, and Wittes R. Esophageal complications in the treatment of oat cell carcinoma with combined irradiation and chemotherapy. Radiology 123:185-187, 1977
6. D'Angio GJ, Farber S, and Maddock CL. Potentiation of x-ray effects by actinomycin D. Radiology 73:175, 1959
7. Donaldson SS, Glick JM, and Wilbur JR. Adriamycin activating a recall phenomenon after radiation therapy. Ann Int Med 81:407-408, 1974
8. Ectubanas E, and Wilbur JR. Uncommon side effects of adriamycin. Ca Chemother Rep 58:757-758, 1974
9. Friedman MJ, Gordon AE, Jones SE, Cruz D, and Moon TE. 1-year followup of cardiac status after adriamycin therapy. Ca Treat Rep 63:1809-1816, 1979
10. Greco FA, Brereton HD, Kent H, Zimbler H, Merril J, and Johnson RE. Adriamycin and enhanced radiation reaction in normal esophagus and skin. Ann Int Med 85:294-298, 1976
11. Greco FA, Richardson RL, Snell JD, Stroup SL, and Oldham RK. Small cell lung cancer, Complete remission and improved survival. Amer J Med 66:625-630, 1979
12. Kent CH, Brereton HD, and Johnson RE. "Total" therapy for oat cell carcinoma of the lung. Int J Rad Oncol Biol Phys 2:427-432, 1977
13. Myer EG, Poulter CA, and Aristizabel SA. Complications of irradiation related to apparent drug potentiation by adriamycin. Int J Rad Oncol Biol Phys 1:1179-1188, 1976
14. Newburger PE, Cassady JR, and Jaffe N. Esophagitis due to adriamycin and radiation therapy for childhood malignancy. Cancer 42:417-423, 1978
15. Phillips TL, and Fu KK. Quantification of combined radiation therapy and chemotherapy effects on critical normal tissues. Cancer 37:1186-1200, 1976
16. Redpath JL, David RM, and Coleman M. The effect of adriamycin and radiation damage to mouse lung and skin. Int J Rad Oncol Biol Phys 4:229-230, 1978
17. Steel GG, Adams K, and Peckham MJ. Lung damage in C57B1 mice following thoracic irradiation: enhancement by chemotherapy. Brit J Radiol 52:741-747, 1979
18. Vogelzang NJ. "Adriamycin flare": A skin reaction resembling extravasation. Ca Treat Rep 63:2067-2069, 1979

---

# Results of Carotid Artery Surgery for Cerebral Vascular Insufficiency

PHILIP J. SCHROEDER, M.D.

**ABSTRACT—Surgical procedures in the carotid arteries in the neck have become commonly recognized as being indicated in certain patients with cerebral vascular insufficiency. During the past 10 years, the number of qualified surgeons performing these procedures has increased. The indications, work-up, and results from one institution are reviewed in detail.**

Carotid surgery in selected patients with cerebral vascular insufficiency has become standard in most hospitals with the most commonly performed operation being carotid endarterectomy. However, the various intraoperative techniques have not become universally standardized.[1,2,4,5] Also, various reports of surgical complications and results have appeared in the surgical literature.[1-5] At the Waterbury Hospital Health Center, 81 separate carotid artery procedures were performed from January, 1970 to October, 1980 for carotid artery occlusive disease in the neck. From 1970 to 1975, 19

---

PHILIP J. SCHROEDER, M.D., Associate Director of Surgery, Waterbury Hospital Health Center.

procedures were done with 4 patients having separate bilateral procedures. From 1975 to 1980, 62 procedures were performed with 9 patients having separate bilateral procedures. The two groups of patients were evaluated separately.

## Results

The surgery was done during the first 5 year period by three individual surgeons. Eighteen of the 19 procedures on 15 patients were carotid endarterectomy at the carotid bifurcation. All but one of these were closed without a patch graft. One patient had a dacron patch of the carotid bifurcation without endarterectomy. Two patients had bilateral carotid bruits and 10 of the 19 carotids operated on had corresponding bruits. Eight of the patients had pre-existing neurologic deficits with one of these being of acute onset without resolution. Four patients had documented peripheral vascular disease in the legs, and 6 patients had pre-existing coronary artery disease by history and/or EKG.

Vascular laboratory evaluation was not available during this period. Carotid angiography demonstrated bifurcation stenosis of greater than 50% in all instances. Intracerebral views were not routinely obtained. Seven patients had brain scans; 5 were normal and 3 demonstrated decreased flow to one side of the brain. The indications for surgery on each carotid were: 9 instances of TIA's; 1 instance of an evolving stroke; 2 instances of an asymptomatic bruit (having had an arteriogram for a contralateral symptomatic bruit); 2 instances of generalized CNS deficit; 5 instances of amaurosis fugax. Sixteen of the 19 procedures (84%) were done with an indwelling shunt. The carotid occlusion time for all 19 procedures ranged from 5 minutes to 40 minutes with an average occlusive time of 15 minutes. Six patients had mild post-operative neurologic deficits which cleared by the time of discharge. There were no significant wound complications. There was one mortality, and that was the patient with an evolving stroke whose stroke continued to progress postoperatively.

The surgery was done during the second 5 year period by 9 individual surgeons. Sixty-one of the 62 procedures on 53 patients were carotid endarterectomy at the carotid bifurcation. One patient had a graft from the right common carotid artery to the left internal carotid artery to bypass a totally occluded common carotid artery. Thirty-four of the 62 carotids operated on had corresponding bruits. Twenty-one of the patients had pre-existing neurologic deficits with six of them being of acute onset without resolution. Three patients had documented peripheral vascular disease and two patients had abdominal aortic aneurysms. Eleven patients had pre-existing coronary artery disease by history and/or EKG.

Vascular laboratory evaluation was performed on 12 patients from 1978 to 1980. All 12 patients had comparison oculoplethysmography by the ZIRA technique, doppler evaluation, and phonangiography. These studies were helpful in making the diagnosis in 10 of the 12 patients. Ophthalmic artery pressures were measured in 4 patients utilizing the Life Science equipment and were helpful in one of the 4 patients so evaluated. Carotid arteriography demonstrated bifurcational stenoses of greater than 50% in all but two carotids and these two carotid arteries had significant ulcerations demonstrated. Four of the carotids had significant ulcerated plaques along with significant stenoses. Intracerebral views were not routinely obtained. CAT scans or brain scans were obtained in 28 patients and were abnormal in 9. The indications for surgery on each carotid were: 21 instances of TIA's; 6 instances of an evolving stroke; 6 instances of an asymptomatic bruit (having had arteriography for a contralateral symptomatic carotid bruit); 7 instances of a generalized CNS deficit; 16 instances of amaurosis fugax; 6 instances of a completed stroke with carotid stenosis. 36 of the 62 procedures (58%) were done with an indwelling shunt. The total carotid occlusion time for all 62 procedures ranged from 3 minutes to 45 minutes with an average total occlusion time of 12 minutes. Two patients had mild postoperative neurologic deficits which cleared by the time of discharge. Two patients had persistent facial nerve weakness. Three patients had postoperative strokes with a death occurring in one of these patients. There were 3 significant wound hematomas and one instance of a pulmonary embolus. One patient who had staged bilateral carotid artery endarterectomies developed bilateral vocal cord paralysis requiring tracheostomy.

The single death that occurred, occurred in a patient who was re-operated on for a suture line disruption. One of the other major strokes which occurred, developed in a patient who had a greater than 50% stenosis at the carotid bifurcation on the side corresponding to the patient's symptoms with a normal contralateral carotid artery. No shunt was utilized in this patient because of acceptable back bleeding, and the total occlusion time of the carotid artery was 17 minutes. Postoperatively, this patient developed thrombosis of the carotid artery and was taken back immediately to surgery for a trombectomy which was successfully completed. However, the patient continued with a major neurologic deficit. The other major stroke which occurred, occurred in a patient who had had a completed stroke in the past. Carotid arteriography demonstrated a greater than 50% stenosis at the carotid bifurcation. At the time of surgery a shunt was utilized and the total carotid occlusion time was approximately 13 minutes. 24 hours postoperatively, the patient had a significant increase in the pre-existing neurologic deficit, and repeat arteriography indicated a possible embolus to the corresponding middle cerebral artery.

### Discussion

The current study indicates an increase in the number of carotid surgical procedures performed in the last 5 years of the study compared to the first 5 years of the study and by a larger number of surgeons. In the period from 1975-1980, fewer of the procedures were done with an indwelling shunt - 58% compared to 84%. The average carotid occlusion time, as well as the indications for surgery, were similar in the two time periods. During the period from 1970 - 1975 the incidence of mild temporary neurologic deficits was 32%, but there was only one major stroke for an incidence of 5% which also resulted in a mortality.

From 1975 - 1980, the incidence of mild neurologic deficits was only 6%. There were 3 major strokes for an incidence of 5% with one of these resulting in a mortality (2%). One patient did have, however, bilateral vocal cord paralysis requiring a tracheostomy which is a rather rare complication.[3] The demonstrated decrease in mortality is in agreement with mortality figures from Jesse Thompson[5] indicating a decrease in mortality with increasing experience. The significant decrease in temporary neurologic deficits also probably indicates an improvement with experience. These results indicate that carotid surgery in carefully selected patients can be performed with an acceptable incidence of mild neurologic deficits, major stroke and mortality. The results also indicate an improving complication rate with increasing experience.

### REFERENCES

1. Nunn D: Carotid Endarterectomy. Ann Surg 182:733, Dec 1975
2. Connolly J, Kwaan J, Stemmer E: Improved results with carotid endarterectomy. Ann Surg 186:334, Sep 1977
3. Verta MJ Jr, Applebaum EL, McClusky DA, Yao JST, Bergan JJ: Cranial nerve injury during carotid endarterectomy. Ann Surg 185:192, Feb 1977
4. Prioleau WH, Jr, Aiken A, Hairston P: carotid endarterectomy, neurologic complications as related to surgical techniques. Ann Surg 185:678, June 1977
5. Thompson JE, Talkington CM: Carotid endarterectomy. Ann Surg 184:1, July 1976

---

# Endogenous Uveitis: A Multispecialty Problem

I. WILLARD ABRAHAMS, M.D.

**ABSTRACT—The evaluation and management of a patient with Endogenous Uveitis requires cooperative effort and communication between the Ophthalmologist and the Generalist. There is no general "Uveitis Workup", for inquiry must be directed toward specific probable diagnoses based upon ocular findings.**

**Immunologic tests must be submitted prior to the start of systemic steroids for valid results. The various specific causes of Uveitis are reviewed, and associated Medical Syndromes are discussed.**

**Tests for specific retinal antigen evoked immune responses (S antigen, P antigen, rhodopsin, etc.) are in the realm of research, and are of no value in the clinical management of the uveitis patient at this time.**

### Endogenous Uveitis

The group of eye diseases classified as uveitis is characterized by inflammation of the middle layer of the eye i.e. iris, ciliary body and choroid. Uveitis is subdivided into two major etiologic groups, i.e. exogenous (from external sources such as trauma, surgery, etc.) and endogenous (from internal sources such as infection, immune reactions, etc.). It is this later group, endogenous uveitis, that will be dealt with and referred to simply as uveitis in this paper.

Endogenous uveitis is caused by a great variety of factors, such as specific infections, immune reactions,

---

I. WILLARD ABRAHAMS, M.D., Associate Clinical Professor Ophthalmology and Visual Science, Yale University School of Medicine; Director, Uveitis Service, Yale-New Haven Hospital.

Reprint requests to: Yale University School of Medicine, Department of Ophthalmology and Visual Science, 310 Cedar St., BML B219, P.O. Box 3333, New Haven, CT 06510 (Dr. Abrahams).

systemic diseases, various parasites, and certainly unknown causes. For proper management and accurate prognosis, it is essential that a specific and accurate diagnosis be obtained for each uveitis patient whenever possible. With recent advances in ocular diagnosis, immunologic laboratory testing, and availability of some specific therapy, it has become increasingly important that all physicians involved in the patient's care be familiar with the most direct approaches to obtain a specific diagnosis of the etiologic agent causing the patient's problem.

### Medical Consultants

Not infrequently, when faced with a difficult or therapeutically non-responsive case of uveitis, the ophthalmologist refers the patient to an internist or generalist with a request for a "Uveitis Workup." The patient is then subjected to a "complete medical workup" with usually minimal to negative results, and with no diagnosis specific orientation to the various inquiries. It is mandatory that the referring ophthalmologist advise his colleague as to the most probable etiologic factors that might cause the presenting problem, and then direct the inquiry in certain probable areas, i.e. does this patient have systemic sarcoidosis, is there evidence of ankylosing spondylitis, etc.

### Terminology

Uveitis is subdivided into anatomically descriptive subcategories which specify the part primarily involved in the inflammatory process i.e. iris = iritis, iris and ciliary body = iridocyclitis, ciliary body = cyclitis, pars plana area = pars planitis or peripheral uveitis, choroid = choroiditis, retina = retinitis, vitreous = vitritis, etc. If the process is believed to originate in the choroid with secondary retinal involvement, it is termed chorioretinitis, if originating in the retina with secondary involvement of the choroid, it is termed a retinochoroiditis. Primary involvement of the retinal vasculature is designated as a vasculitis, arteritis, periphlebitis, etc. where appropriate.

The terms "granulomatous" and "non-granulomatous" uveitis are in wide use, and are descriptive terms based upon ocular findings.[1] The division of uveitis into these two categories bears some relationship to possible etiologic considerations within each group.

The terminology used in this article will be primarily anatomically descriptive, i.e. iritis, choroiditis, etc. with some utilization of the granulomatous and non-granulomatous classification when applicable. The clinical characteristics of granulomatous and non-granulomatous uveitis are contrasted in Table I.

### Iridocyclitis (Non-granulomatous)

Acute iridocyclitis, either unilateral or bilateral, unassociated with other ocular involvement is the most frequent form of uveitis clinically seen. With its sudden and dramatic onset, the patient seeks medical help almost immediately. The pain, redness, photophobia, and circumlimbal injection are most characteristic. Most cases usually respond to topical therapy within 2 - 3 weeks (mydriatic - cycloplegic and topical steroids) and infrequently require further diagnostic testing. Some patients fail to respond to local therapy or have frequent exacerbations, and require more specific medical attention to determine the possible underlying causes.

TABLE I

| *Uveitis* | *Granulomatous* | *Non Granulomatous* |
|---|---|---|
| Onset | Indolent | Acute |
| Symptoms | Visual opacity | Pain, photophobia, lacrimation |
| Signs | External eye quiet | Eye red, circumlimbal injection |
| Anterior Chamber | Quiet or mutton fat KP, Ray & cells, possible synechiae | Ray & cells<br>Possible synechiae |
| Vitreous | May be cloudy | Clear |
| Fundus | Probable focal lesions | No focal lesions |

In children, the association of iridocyclitis and Juvenile Rheumatoid Arthritis (JRA) is definite and well established,[2, 3] but the iridocyclitis is usually insidious in onset, is present in a white, non-flamed eye, and may be detected only after the iridocyclitis has caused cataract formation, and the child is referred for visual difficulty. The JRA may be monoarticular and may be preceded by the iridocyclitis.

The association of iridocyclitis and ankylosing spondylitis, especially in adult males, is well documented and associated with the presence of HLA-B27[4] in 80 - 100% of patients. Lower back X-rays are indicated in all problem cases of iridocyclitis, for many patients with ankylosing spondylitis may be asymptomatic.[5] The association of iridocyclitis and HLA-B27 is also statistically significant without the presence of ankylosing spondylitis.[6] Iridocyclitis associated with urethritis, polyarthritis, and mucosal inflammation should lead one to consider Reiter's Syndrome.[7] An HLA-B27 association with Reiter's syndrome has been established.[8] The presence of aphthous ulcers, genital ulcers, erythema nodosum and iridocyclitis characterize Behcet's syndrome, with its ominous long term visual prognosis.[9] The iridocyclitis may be associated with retinitis and retinal vasculitis. The positive pin prick test (polymorphonuclear attraction) with pustule development at the site in 24 hours, is positive in approximately 80% of patients, and may help establish the diagnosis. These patients may have arthritis, intestinal lesions, epididymitis, vascular, neurologic, and psychotic symptoms as part of their disease picture.[10] An association with the presence of HLA-B5 has been demonstrated.[11]

Most cases of iridocyclitis do not fit into the above categories, however, and a search for a chronic sinusitis (sinus x-rays),[12] or apical abscesses or chornic dental infections, (full mouth X-rays)[13] should be undertaken. Treatment of the chronic infection may clear the iridocyclitis, and is certainly indicated for the specific infection in any event.

The iridocyclitis of Herpes simplex keratitis is a strictly ophthalmologic diagnosis, and beyond the scope of this discussion,[14] as is Fuchs heterochromic irtidocyclitis (iridocyclitis with heterochromia)[15] and the Posner-Schlossman syndrome (iridocyclitis with elevated intraocular pressure in males). The iridocyclitis associated with Herpes zoster of the ophthalmic division of the ipsilateral V cranial nerve usually poses no diagnostic problem, but may rarely occur with involvement of only the nasociliary branch of the ipsilateral fifth cranial nerve.

### Granulomatous Uveitis

Unlike iridocyclitis, where many associated syndromes give a similar ocular picture, in the "granulomatous uveitis" group some quite specific etiologic agents produce rather distinct and characteristic clinical ocular findings. In this geographic area, the two most commonly seen types of granulomatous uveitis are toxoplasmosis and sarcoidosis, while in the Midwest, presumed ocular histoplasmosis is the most common form of uveitis seen (90% of uveitis patients seen at the University of Indiana). Other causes of "granulomatous uveitis" are actinomycosis, blastomycosis, coccidiodomycosis, tuberculosis, syphilis, nematodes (Toxocara canis) sporotrichosis, candida, leprosy and other less common parasites.

### Toxoplasmosis

Toxoplasmosis uveitis is the only true retinochoroiditis in this group of diseases. Toxoplasma gondii is a neuroepithelial invader, and hence the initial lesion starts in the retina. This fact accounts for the overlying vitreous haze and indistinctiveness of the focal lesion in its early stages. Toxoplasmosis lesions may occur either as focal mid-peripheral lesions with overlying vitreous haze, as a recurrent satellite or daughter lesions directly adjacent to a healed scar, as a juxtapapillary lesion, or at a posterior location adjacent to or immediately involving the macular area with a sudden decrease in vision, which may be irreversible. It is this last category which must be immediately recognized and appropriately treated if any useful vision is to be preserved. In the newborn, 80% of symptomatic congenital toxoplasmosis patients have ocular involvement, usually in the macular area, and 85% are bilateral.

The epidemiology of ocular toxoplasmosis is still not completely understood.[16] Although it is well documented that systemic toxoplasmosis can be acquired from inadequately cooked meat,[17, 18] and possibly by the ingestion of oocytes associated with cat feces and the handling of cats.[19, 20], less than 1% of patients who have acquired systemic toxoplasmosis infections in adult life develop eye lesions. It is generally believed that ocular toxoplasmosis represents a manifestation of a congenitally acquired toxoplasmosis infection with subsequent rupture of incysted organisms lying dormant in the retina.[16-21] To further confuse the issue, the percent of positive toxoplasmin skin tests in a group of persons of the same age is roughly equal to the age of that group (i.e. 50 years old -50% positive) and increases until at least the seventh decade.[22] Vegetarians in India have the same degree of positive toxoplasmin immunologic tests as do meat eaters.[23]

The immunologic laboratory test in current use is the toxoplasmin indirect fluoresent antibody (IFA) test, and is now being done by Connecticut State Department of Health, which sends it to the Communicable Disease Center Laboratory (CDC). A titer of 1:256 or greater is considered positive, although many cases of undoubted active ocular toxoplasmosis have been seen on the uveitis service at Yale-New Haven with IFA titers below 1:256 on repeated testing. It is unusual to see a titer rise on subsequent blood samples submitted during the course of an active ocular toxoplasmosis infection, possibly due to the long standing host-parasite relationship.

It is currently believed that most cases of ocular toxoplasmosis are congenital, i.e. passed from the recently infected mother to the fetus in utero, and a mother who had previous exposure to a toxoplasmosis infection with a resulting immune response was felt to be incapable of passing on toxoplasmosis infection to subsequent children,[24] but reports of consecutive siblings being infected, possibly by chronic uterine infection in the mother, have appeared.[25]

The importance of establishing toxoplasmosis as the causative agent in a specific patient cannot be too strongly emphasized for two important reasons:

(A) Steroids should never be used in active toxoplasmosis without simultaneous chemotherapy.[26]

(B) The specific antibiotic/sulfa therapy i.e. Clindamycin and Sulfadiazine, seems to be quite effective when promptly administered, is able to penetrate the intact cyst wall and is bacteriocidal to the organism.[27] Neither of these latter facts were true of Pyrimethamine (Daraprin) which, until recently, was the only therapeutic agent of some use against toxoplasmosis organisms.

Both of these agents have potential harmful side effects i.e. pseudomembranous colitis with Clindamycin[28] and marrow depression with Daraprin, [29] so it is important that the diagnosis of toxoplasmosis be firmly established before the use of either of these agents. The fact that a patient has a positive toxoplasmosis indirect fluorescent antibody titer does not in itself establish the diagnosis. The ocular picture must fit that of the various types of toxoplasmosis, and frequent communication between the ophthalmologist and internist is mandatory during the systemic treatment of toxoplasmosis uveitis.

### Histoplasmosis i.e. (Presumed Ocular Histoplasmosis Syndrome)[30-32]

This clinical uveitis syndrome is "presumed" because cases have been reported from areas in which histoplasmosis is not endemic i.e. England, Belgium, Netherlands, and further, the actual organisms have not been isolated from the few pathology specimens available. Koch's postulates have not been fulfilled thus far, but the epidemiologic evidence for the casual relationship is impressive.

The presumed ocular histoplasmosis syndrome consists of a triad of ocular findings, i.e. small descrete peripheral "punched out" yellowish focal lesions with a fine rim of pigment, circumpapillary scarring, and in a small percentage of patients (approximately 4.5%) a hemorrhagic disciform macular lesion. Of interest, in highly endemic areas (Midwest), only apparently 2% of the population show ocular lesions. The ocular picture is rarely seen in acute systemic histoplasmosis. Histoplasmin skin tests are positive in only about 90% of patients with the ocular picture described above, and the histoplasmosis CF test is positive in only approximately one-third of patients with the presumed ocular histoplasmosis syndrome. The peripheral lesions are entirely asymptomatic and are rarely, if ever, seen in the acute stage. The patients seek medical attention for visual loss secondarily to macular involvement. Amphoptericin B and other antifungal agents are of no use in the treatment of ocular histoplasmosis. Systemic steroids are used in treatment of histoplasmin maculopathy, as is laser photocoagulation for subretinal neovascularization.

In patients with all three components of the triad, i.e. peripheral punched out lesions, circumpapillary scar, and maculopathy, there is a statistically significant correlation with HLA-B7.[33] The presumed ocular histoplasmosis syndrome is rarely seen in New England.

### Sarcoid

Sarcoid uveitis is the most common type of uveitis seen on the uveitis service of Yale-New Haven Hospital. Most patients are in their twenties and thirties, predominantly black, females slightly outnumbering males, and mostly long time natives of Connecticut. The vast majority of patients present first to the eye service with no knowledge of the existence of their systemic disease, and approximately 50% of patients fail to show systemic evidence of sarcoidosis at that time. The single most useful diagnostic study has been a chest X-ray, with approximately 50% of patients showing X-ray evidence, usually bilateral hilar adenopathy, of systemic sarcoidosis.

The ocular picture of sarcoidosis is fairly characteristic, but shows great individual variation. Although a full blown granulomatous type iridocyclitis with large mutton fat keratic precipitates, ray and cells, occasional iris nodules, large peripheral anterior synechia[1] in the chamber angle, and posterior synechia of the iris to lens is more common, patients have been seen with either a non-granulomatous iridocyclitis, or no anterior chamber involvement at all. Initially vitreous haze is not common, but pre-retinal whitish nodules, located in the deep vitreous, usually inferiorly, are common.[34] Peripheral retinal periphlebitis with sheathing of the vessels and segmented narrowing of the retinal vessels is also frequently seen.[35] Less often seen is heavy perivascular white deposits resembling candle wax drippings on peripheral retinal vessels.[36] Occasionally one encounters widespread retinal edema and intraretinal hemorrhages. Localized chorioretinal lesions are extremely rare,[37] but hard white descrete intraretinal deposits are not uncommon. Rarely, sarcoid involvement of the optic nerve head is encountered.[38] Sarcoid nodules of the conjunctiva and nodules of the iris are extremely rare.

Despite recent reports,[39, 40] our experience with the ACE test (angiotension coverting enzyme) has been disappointing, with even the more florid systemically involved patient (large hilar adenopathy, etc.) usually having an ACE within normal limits. Once systemic steroids are started, the ACE test will be negative, and must be submitted prior to instituting steroid therapy. The ophthalmologist should be able to specifically direct his medical colleague to look for evidence of systemic sarcoidosis on the basis of ocular findings. Most of these patients require systemic steroid therapy for long periods of time, and unfortunately some of these patients cannot be fully controlled on even high systemic steroid dosage, and progress unremittingly to cataract formation, secondary glaucoma, and ultimately phthsis and blindness over a period of years. The medical management of those patients is beyond the scope of this paper, but it is vitally important that constant communication exists between the internist and the ophthalmologist to coordinate levels of systemic steroid therapy.

### Peripheral Uveitis[41, 42] (Pars Planitis)

Pars planitis is a relatively common, poorly understood clinical type of uveitis seen in children and adolescents. The disease has an insidious onset with little external evidence of inflammation. The reaction begins inferiorly either in the far peripheral retina or in the ora serrata-posterior ciliary body area, with focal peripheral retinal periphlebitis. Some cells appear in the anterior vitreous, and whitish deposits appear over the inferior pars plana area. Macular edema is a common sequellae, and it is the symptom of decreased visual acuity which usually initiates the quest for ophthalmologic help. To date, there has been no specific systemic disease which can be correlated with this syndrome, hence an etiologic workup seems of little use, although sarcoidosis, far peripheral toxoplasmosis, peripheral Toxocara canis infections, etc. have been reported as possible associated diseases. The value of systemic or retrobulbar steroid therapy is questioned for the pars planitis per se, but is absolutely indicated for the treatment of the associated cystoid macular edema, which is the primary cause of permanently decreased visual acuity. General anaesthesia may be required for retrobulbar steroid injections in young children. The use of systemic steroid therapy in young children will require the cooperative efforts of the pediatrician and the ophthalmologist.

There are many other more rare types of uveitis which are definitely ocular manifestations of widespread systemic disease such as Vogt-Koyanagi-Harada syndrome (alopicia, vitiligo, dysacousia, poliosis, meningeal signs and uveitis), cytomegalic inclusion disease in the immunosupressed host, syphilitic uveitis in the tertiary stage (FTA positive, VDRL usually negative) as well as fungal uveitis other than histoplasmosis (mucoromycosis, cryptococcosis, cocciciodomycosis, aspergilosis, blastomycosis, etc.). The close cooperation and pooling of expertise between the ophthalmologist and internist is an obvious necessity in the diagnosis and management of these types of problems.

## Autoimmunity in Uveitis

The role of immune reactions in uveitis has long been studied in experimental animals, with work going back a half century. Various antigens i.e. bovine serum albumin, were injected into an animal's eye, the reaction allowed to subside, and then one month or more later, the animal was challenged systemically and a uveitis type picture was produced in that eye. Conversely, the animal could be sensitized systemically and challenged locally with a wide variety of proteins and a similar uveitis type picture could be produced.

It was not until relatively recently, however, that it was possible to produce experimental autoimmune uveitis (EAU) in various species of experimental animals by immunization in remote sites (foot pad etc.) with various ocular tissues[43-46] rod outer segments [47] S antigen[48, 49] and rhodopsin[50] in adjuvant. The testing of humans for specific immune reactions to retinal antigens has been limited and includes testing for cell mediated immunity to S antigen in a randomly selected small number of uveitis patients with some positive results.[51] Autoreactivity to retinal antigens has also been reported to exist in some case of retinitis pigmentosa.[52]

An ongoing clinical-laboratory correlated study is currently underway at Yale, which is investigating humoral antibody responses to various retinal antigens in many specific types of uveitis. This study has the benefit of statistically significant numbers of patients in each diagnostic category, an ocular immunology laboratory under the direction of Dale Gregerson, PhD, a serum bank of 800 uveitis sera, a definite clinical protocol, the same physician, (IWA) examining each patient at each visit, and direct correlation of the antibody titer results of each sample with the level of activity and current therapy at that time. At this time, there are widespread and varied serum antibody responses to both S antigen and P antigen, and not a direct correlation between level of activity and antibody response.[53] Long term longitudinal studies are now underway in specific patients in many diagnostic categories, as well as investigation of the role of other retinal antigens eliciting serum antibody responses. All of this immune testing is still in the research realm, however, and has no place in the non-research clinical investigation of the uveitis patient.

## Conclusion

This brief paper has attempted to highlight the various types of uveitis for the non-Ophthalmologist, to specify associated general medical diseases, and to emphasize the need for collaboration between the Ophthalmologist and the Internist, Generalist or Pediatrician for the diagnosis and management of these patients.

No single standard uveitis workup will suffice for all types of uveitis patients. The diagnostic inquiry should rather be specifically directed toward the most probable etiologic factors for maximum benefit and return from cost, risk, and effort expended. The only common tests and procedures in all uveitis workups should be VDRL and FTA-ABS (even with negative VDRL), a toxoplasmin IFA titer, and a chest film. The other components of the uveitis workup will be determined by the patient's medical, social, and travel history, and the clinical findings. Testing for cell mediated or humoral antibody responses to retinal antigens is not applicable to the clinical evaluation of the uveitis patient at this time.

## Acknowledgements

I wish to thank Mary Bannon for her help in preparing this manuscript and to Dale Gregerson, Ph.D. for reviewing the manuscript. This work was supported by unrestricted funds from Connecticut Lions Eye Research Foundation and Research to Prevent Blindness.

## REFERENCES

1. Woods AC. Endogenous uveitis. William & Wilkins, Baltimore 1956
2. Keif S, Kimira S. Iridocyclitis associated with juvenile rheumatoid arthritis. Amer J Ophthal, 80:425-429, 1975
3. Kanski JJ. Anterior uveitis in juvenile rheumatoid arthritis. Arch Ophthalmol 95:1794-1797, 1977
4. Brewerton DA, Caffrey M, Nicholls A, Walters, D and James DCO. Acute anterior uveitis and HLA-B27. Lancet 2:994-999, 1973
5. Hockberg, R. Absence of back pain in classic ankylosing spondylitis, Johns Hopkins Med J 143:181-183, 1978
6. Mapstone R and Woodrow JC. HLA-B27 and acute anterior uveitis, Brit J Ophthal 59:270-275, 1975

7. Paronin I. Reiter's disease: a study of 344 cases observed in Finland, Acta Med Scand 131 Suppl 212:1-114, 1948
8. Brewerton DA, Caffrey M, Nicholls A, Walters D, Oates JK and James DCO. Reiter's disease and HLA-B27, Lancet 2:966-998, 1973
9. Mishima S, Masuda K, Izawa Y, Mochisuki M, and Namba K. Behcet's disease in Japan: ophthalmologic aspects, Trans Am Ophthalmol Soc 77:225-79, 1979
10. Masuda K, Inaba G, Mezushima H and Yaoita H. A nationwide survey of Behcet's disease in Japan, Jap J Ophthalmol, 19:278-285, 1975
11. Ohno S, Sugiura S, Ohguchi M and Aoki K. Close association of HLA-B5 with Behcet's disease. Immunology and Immunopathology of the Eye, ed by Silverstein AM and O'Connor GR, Masson Publishing USA. p 15-17, 1979
12. Glover, GW and MacLean H. Uveitis as a complication of sinusitis, J Laryngol Otol, 86:1233-6, 1972
13. Sela M and Shanov Y. The dental focal infection as an origin for uveitis. Israel J Dent Med, 24:31-5, 1975
14. O'Connor GR. Recurrent Herpes simplex uveitis in humans, Surv Ophthalmol 21:165-70, 1976
15. Loewenfeld IW and Thompson HS. Fuchs heterochronic iridocyclitis, Surv Ophthalmol 17:394-457, 1973
16. Desmonts G, Some remarks on the immunopathology of toxoplasmic uveitis, Mod Probl Ophthal 16:228-232, (Krager, Basel 1976)
17. Kern GH, Kimball AC and Christensen WN. An epidemic of acute toxoplasmosis, JAMA 208:1002-1004, 1969
18. Masur H, Jones TC, Lempert VA and Cherubini TD. Outbreak of toxoplasmosis in a family and documentation of acquired retinochoroiditis, Amer J Med 64:396-401, 1978
19. Wallace GD. Isolation of Toxoplasma gondii from feces of naturally infected cats, J Infect dis 124:227-228, 1971
20. Wallace GD, Serologic and epidemiologic observations on toxoplasmosis on three Pacific atolls, Amer J Epidemiol 90: 103-111, 1969
21. O'Connor GR. Manifestation and management of ocular toxoplasmosis, Bull NY Acad Med 50:192-209, 1974
22. Feldman H and Sabin A. Skin reactions to toxoplasmin antigen in people of different ages without known history of infection, Pediatrics 4:798-804, 1949
23. Rawal BD. Toxoplasmosis: a dye-test survey on sera from vegetarians and meat eaters in Bombay, Trans Royal Soc Trop Med Hyg 53:61-63, 1959
24. Perkins ES. Ocular toxoplasmosis. Brit J Ophthal 57:1-17, 1973
25. Lou P, Kazdan J and Basu PK. Ocular toxoplasmosis in three consecutive siblings. Arch Ophthal 96:613-614, 1978
26. O'Connor GR and Frenkel JK. Dangers of steroid treatment in toxoplasmosis. Arch Ophthal 94:213, 1974
27. Tabbata K and O'Connor GR. Treatment of ocular toxoplasmosis with Clindamycin and Sulfadiazine, Ophthalmology 87:129-134, 1980
28. Howard PH and Dych WP. The spectrum of Lincomycin-Clindamycin colitis, Gastroenterology, 66:1137-1144, 1974
29. Leopold I. Therapy of toxoplasmin uveitis. Amer J Ophthal 59:55-61, 1965
30. Woods AC and Wahlin HE. The probably role of benign histoplasmosis in the etiology of granulomatous uveitis. Am J Ophthal 49:205-220, 1960
31. Schlaegel TF Jr. Essentials of uveitis. Little Brown Co., Boston 135-163, 1969
32. Schlaegel TF Jr and O'Connor GR. Current aspects of uveitis. Int Ophthal C1, 17:3-121, 1977
33. Godfrey WA, Sabates R and Cross DE. Association of presumed ocular histoplasmosis with HLA-B7, Immunology and Immunopathology of the Eye, p 5-9, Silverstein AM and O'Connor GR, Masson, NY 1979
34. Landers PH. Vitreous lesions observed in Boeck's sarcoid. Amer J Ophthal 32:1740-1741, 1949
35. Levitt JM. Boeck's sarcoid with ocular localization, survey of the literature and report of a case. Arch Ophthal 26:358-388, 1941
36. Franceschetti A and Babel J. La Chorio-retinite en "taches de-bougie" manifestation de la maladie de Besnier-Boeck. Ophthalmologica (Basel) 118:701-710, 1949
37. James DG, Anderson R, Langeley D and Ainslie D. Ocular sarcoidosis. Brit J Ophthal 48:461-470, 1964
38. Jampol LM, Woodfin W and McLean EB. Optic nerve sarcoidosis, report of a case. Arch Ophthal 87:352-360, 1972
39. Weinreb RN, O'Donnell JJ, Sandman R, Char DH and Kimira SJ. Angiotensin - converting enzyme in sarcoid uveitis. Invest Ophthalmol Vis Sci, 18:1285-1287, 1979
40. Weinreb RN and Kimira SJ. Uveitis associated with sarcoidosis and angiotensin converting enzyme. Amer J Ophthal 89:180-185, 1980
41. Brockhurst R, Schepens C and Okamura U. Uveitis II: Peripheral uveitis: Clinical description, complications and differential diagnosis. Amer J Ophthal 49:1257-1266, 1960
42. Brockhurst R, Schepens C and Okamura I. Uveitis III: Peripheral uveitis: Pathogenesis, etiology and treatment. Amer J Ophthal 51:19-25, 1961
43. Aronson, SB, Hogan MJ and Zweigart P. Homo-immune uveitis in the guinea pig. I General concepts of auto-and homo-immunity, methods and manifestations. Arch Ophthalmol 69: 105-109, 1963
44. Aronson SB, Hogan MJ and Zweigart P. Homo-immune uveitis in the guinea pig. II. Clinical manifestations. Arch Ophthalmol 69:203-207, 1963
45 Aronson SB, Hogan MJ and Zweigart P. Homo-immune uveitis in the guinea pig. Ill. Histopathologic manifestations of the disease. Arch Ophthalmol 69:208-219, 1963
46. Wacker WB and Lipton MM. Experimental allergic uveitis: Homologous retina as a uveitogenic antigen, Nature (London) 206:253-254, 1965
47. Meyers RL and Pettit TH. Pathogenesis of experimental allergic uveitis induced by retinal rod outer segments and pigment epithelium. J Immunol 114:1269-1274, 1975
48. Wacker WB, Donoso LA, Kalsow CM, Ynakeelov JA Jr, and Organisciak DT. Experimental allergic uveitis. Isolation, characterization and localization of a soluble uveitopathogenic antigen from bovine retina. J Immunol 119:1949-1958, 1978
49. Dorey C, Tuyen VV, Cozette J and Faure JP. Isolation and properties of retinal S antigen. In: Immunology and Immunopathology of the Eye, edited by Silverstein AM and O'Connor GR: Masson Publishing Co, New York, 110-112, 1979
50. Marak GE Jr, Shichi H, Rao NA and Wcker WB. Patterns of experimental allergic uveitis induced by rhodopsin and retinal rod outer segments. Ophthal Res 12:165-170, 1980
51. Nussenblatt RB, Gery I, Ballintine EJ and Wacker WB. Cellular immune responsiveness of uveitis patients to retinal S-antigen, Am J Ophthalmol 89:173-179, 1980
52. Brinkman CJJ, Pinckers AJLG and Broekhuyse RM. Immune reactivity to different retial antigens in patients suffering from retinitis pigmentosa. Ives Ophthalmol Visual Sci 19:743-750, 1980
53. Gregerson DS, Abrahams IW and Thirkill CE. Serum antibody levels of uveitis patients to bovine retinal antigens. Ives Ophthalmal and Visual Sci (in Press)

# Unusual Chromosomal Translocation, t(1p+,7q−), and Familial Leukemia in a Patient with Chronic Myelomonocytic Leukemia

GEORGE C. ROUSH, M.D., M.P.H.

ABSTRACT—A 68 year old man presented with myelomonocytic leukemia and was given busulfan intermittently for three years. After an additional two years during which the patient received no chemotherapy, his disease progressed gradually to a blast phase, whereupon treatment with vincristine, cytosine arabinoside and prednisone produced a dramatic response. Karyotype of peripheral blood leukocytes taken just prior to therapy with the latter regimen showed a translocation of the long arm of chromosome 7 to the short arm of chromosome 1 in five of eleven cells; the same translocation, t(1p+, 7q−), was seen in subsequent karyotyping of marrow cells. Acute undifferentiated leukemia in a sister, CLL in a first and second cousin, and Hodgkin's disease in a grandson have been documented. Abnormalities of chromosome seven and the family history of hematopoietic malignancy are discussed.

Abbreviations: CMMoL = chronic myelomonocytic leukemia;
AMMoL = acute myelomonocytic leukemia;
CML = chronic myelocytic leukemia;
ANLL = acute non-lymphocytic leukemia;
CLL = chronic lymphocytic leukemia;
AL = acute undifferentiated leukemia.

Key words: chromosomes; myelomonocytic leukemia; familial malignancy.

## Introduction

A recurring question in research on leukemia is the pathogenic importance of altered chromosomes. Nonrandom chromosomal abnormalities include the Philadelphia chromosome in CML, trisomy of chromosome 8 or loss of chromosome 7 in ANLL, and deletion of long arm of chromosome 6 or trisomy 21 in ALL. CMMoL is an uncommon condition, and relatively little is known about chromosomal patterns in this myelodysplastic syndrome. Here we present a patient with CMMoL who was found to have an unusual chromosomal translocation t(1p+,7q−) and a family history positive for adult leukemia.

## Case Report

A 68 year old retired businessman presented to his family physician in February 1972 with a four month history of anorexia, fatigue, night sweats and 24 pound weight loss. At the time of diagnosis two relatives had developed adult leukemia (see Figure 1), including a sister with acute undifferentiated leukemia and a first cousin with CLL. Subsequently, a second cousin developed CLL and a grandson was diagnosed as having Hodgkin's disease, nodular sclerosing type. The four cases of leukemia and the case of Hodgkin's disease have been confirmed by review of hospital records or discussion with their respective physicians.

The patient noted that as a clockmaker he experienced minimal exposure to solvents for a period of less than five years occurring approximately 30 years prior to diagnosis. However, he denied any prolonged, intense exposure to solvents or cleaning agents, and denied any exposure to phenylbutazone, chloramphenicol or radiation. He was of Jewish and Russian background.

Physical exam showed a thin white male with spleen and liver both being palpable three centimeters below the costal margins and with bilateral axillary adenopathy. Hemoglobin was 13.9 grams per 100 milliliters, white blood count was 25,200 per cubic millimeter with bands 6%, neutrophils 35%, monocytes 35% (8,800 per cubic millimeter), basophils 3%, lymphocytes 21% and with two nucleated red

---

GEORGE C. ROUSH, M.D., M.P.H., Connecticut Cancer Epidemiology Unit, Yale University.

Reprint requests to: Connecticut Cancer Epidemiology Unit, 135 College St., New Haven, CT 06510 (Dr. Roush).

*This paper was the co-winner of the Connecticut Chapter of the American College of Physicians 1981 Resident's Merit Award.*

blood cells per 100 white cells. Platelet count was 90,000 per cubic millimeter. Peripheral smear also showed immature monocytes and occasional spherocytes. Bone marrow aspirate showed marked hypercellularity with a myeloid to erythroid ratio of 12:1 and a marked proliferation of granulocytes with an increase in blasts and promyelocytes, which constituted approximately 20-40% of the myeloid series. Normoblastic erythropoiesis and moderate decrease in megakaryocytes were also present on marrow exam. Iron stores were present, but no sideroblasts were seen. Serum and urine lysozyme levels were 52.5 micrograms per milliliter (normal 4-13) and 400 (normal less than 5) respectively. Leukocyte alkaline phosphatase score was 2 (moderately decreased). Serum lactic dehydrogenase was 318 (normal 100-225), while other liver enzymes and bilirubin were normal. Serum IgG was 1700 mg per 100 milliliter (normal 570-1900), IgA 560 (60-330), IgM 264 (45-15) with total protein of 7.4 grams pcr 100 milliliters and albumen 4.2. Uric acid was 9.7 milligrams per 100 milliliter. Determinations for pyruvate kinase and hemoglobin F were normal.

A diagnosis of CMMoL was made, and the patient treated intermittently with low doses of busulfan (myeleran) in the range of 2 to 4 milligrams daily through 1975. Subsequently, peripheral cell counts were; monocytes 2,000-6,100, total white count 5,800-14,100 and platelets 43,000-100,000. However, hemoglobin declined to as low as 6.8 requiring frequent transfusions. No chemotherapy was given from 1975 to the time of his first chromosomal karyotyping two years later.

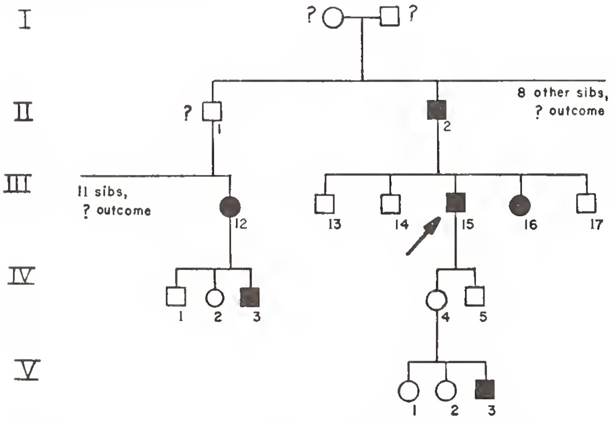


Figure 1
Family history in known relatives with the shaded symbol indicating occurrence of malignancy.

Key: II, 2. Stomach cancer, died in 1929, age 56.
III, 12. CLL, died in 1951, age 65, course of 13 years.
III, 15. CMMoL (case report) died in 1979, age 75, course of 7 years.
III, 16. AL, died in 1965, age 58, course of 1 month.
IV, 3. CLL, died in 1980, age 64, course of 4 years.
V, 3. Hodgkin's disease in grandson, diagnosed as nodular sclerosing, Stage IVb, in 1980 at age 13, now in remission.

In November, 1977, six years after his original diagnosis, the patient developed generalized lymphadenopathy and a spleen extending more than 10 centimeters below the left costal margin. Hemoglobin was 11.1, platelets 85,00 and white count 143,600 with 16% blasts and 6% monocytes. Repeat marrow aspirate was again hypercellular with more than 80% replacement of the marrow by myelo- and monoblasts. Chromosomal analysis of 11 peripheral blood cells cultured 24 hours without phytohemagglutinin using Giemsa banding techniques showed the translocation from the long arm of chromosome 7 to the short arm of chromosome 1 in five of eleven cells. (Figure 2 displays the karyotype from a subsequent marrow analysis in 1979; both karyotypes had an identical pattern.) All cells were checked for $Ph^1$ chromosome, and none was found. Administration of hydroxyurea, prednisone, cytosine arabinoside and oncovine produced a dramatic reduction of the spleen to 4 centimeters in one week. After one month, 6-thioguanine was added. Over the next two months the patient regained his original weight, whereupon oncovine was discontinued. Repeat bone marrow showed a marked reduction in blasts.

In December 1978 the patient developed malaise and jaundice with a bilirubin of 7.5, serum glutamic oxalacetic transaminase of 148 units per liter (normal 5-25) and alkaline phosphatase of 134 units per milliliter (normal 0-85). Hepatitis Bs Ag was negative. Karyotype of marrow leukocytes in March 1979 demonstrated the same translocation in five of five myeloid cells again studied with Giemsa banding, while in two of the five cells monosomy of chromosome 11 and 19 was observed representing laboratory artifact; as before, no $Ph^1$ chromosome was found. Peripheral blood studies of 15 lymphocytes stimulated with phytohemagglutinin failed to reveal the abnormal translocation.

Six-thioguanine and cytosine arabinoside were discontinued. However, the patient's hyperibilirubinemia persisted, and he subsequently expired in April 1979. Autopsy failed to reveal evidence of substantial leukemic infiltrate of liver or biliary system, but did demonstrate severe biliary stasis, moderately severe biliary cirrhosis and acute hemorrhagic pancreatitis associated with several black, friable stones in the biliary radicles. The gross and microscopic exam of the lungs showed an acute aspiration pneumonia.

## Discussion

This case meets diagnostic criteria for CMMoL including a persistent monocytosis in peripheral blood, proliferation of immature myelocytes in the marrow, and high serum and urine lysozymes (1-5). This relatively uncommon disease, which is now classified as a subgroup of the myelodysplastic syndromes, occurred in association with a consistent chromosomal translocation from the long arm of chromosome 7 to the short arm of chromosome 1, evident in both peripheral blood and marrow myeloid cells in the latter part of his eight year course. There were two cousins with CLL, a sister with acute undifferentiated leukemia and a grandson with Hodgkin's disease.

Although it is tempting to conclude quickly that the chromosomal translocation and the family history are of etiologic importance in this man's leukemia, other possibilities need consideration. The subsequent discussion of the possible pathogenic mechanisms draws on literature of both leukemia and myelodysplastic syndromes, because of the relative rarity of CMMoL, the high incidence with which this condition terminates in acute leukemia and the family history of various hematopoetic disorders.

First, the possibility that busulfan resulted in the abnormal karyotype must be considered, because chromosomal analysis was obtained following administration of this alkylating agent. However, chromosomal changes caused by such agents are of the disruptive sort, such as breaks, deletions and gaps; it has not been observed that established karyotypes ascribable to chemotherapy occur[6] in the absence of chemotherapy-induced leukemia. In ten patients with myelodysplastic syndromes (two with polycythemia vera and 8 with CMMoL) treated with busulfan, karyotyping of marrow cells failed to reveal any translocation similar to the above[7, 8]. In our patient, the consistent nature of the abnormality, the fact that the drug had not been used for at least two years prior to karyotyping and the presence of the translocation in

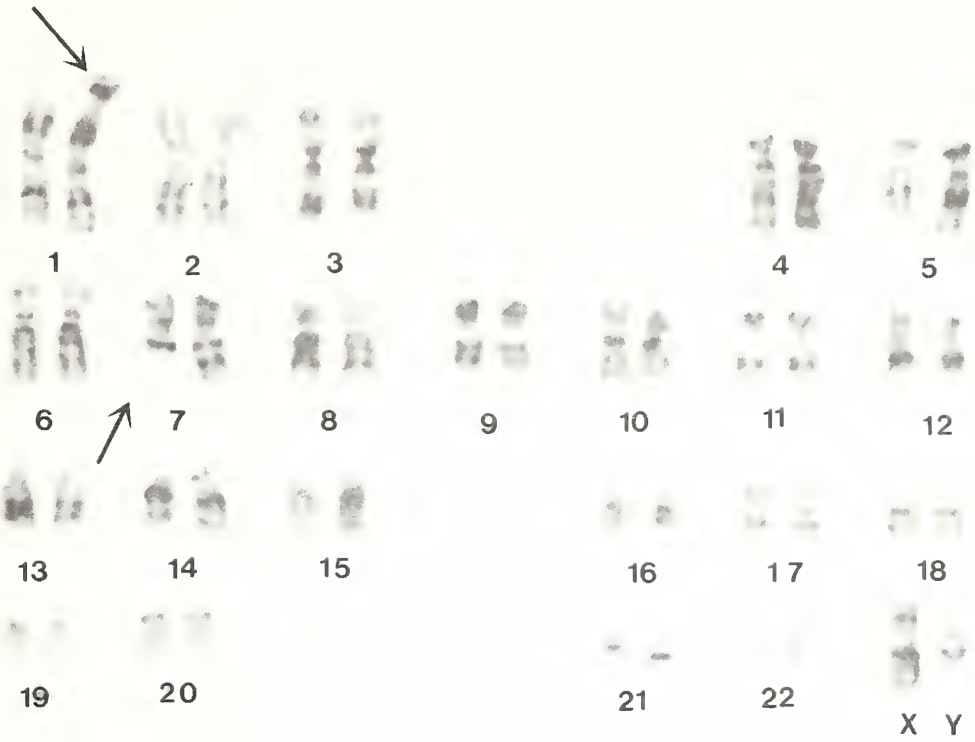


Figure 2
Karyotype of marrow cells demonstrating t (1p+, 7q−), a translocation of a large portion of the long arm of chromosome 7 to the short arm of chromosome 1.

myeloid but not lymphocytic series also make it less likely that this pattern resulted from administration of busulfan. Rather, the chromosomal abnormality is probably tied in some way to the leukemic process itself.

For example, loss or deletion of chromosome 7 is a recognized karyotypic abnormality in refractory anemia and preleukemia[6, 9-13], ANLL including AMMoL[6, 14-18], and in patients with leukemic states complicating the course of Hodgkin's disease[6, 19]. In 105 patients with ANLL, loss of chromosome 7 occurred in 13% and was the most commonly lost chromosome[18, 20].

Consideration of this literature as a whole suggests that some patients in the earlier literature reported as having C monosomy with myelodysplastic syndromes or acute leukemia[2, 21-27] may have had loss of chromosome 7. It is also worth noting that chromosomal material assumed to be lost from the chromosomal karyotype may actually be translocated to another chromosome[28], a situation which applies to the historical development of knowledge of the Philadelphia chromosome[29]. Hence, the present case should be viewed in the context of this previous literature.

While the association between chromosome 7 and leukemia is probably real, it should be noted that loss and deletion of chromosome 7 have been first observed during the blast phase and may be undetectable on initial karyotyping[30]. Hence, in the present patient, the *second* pathogenic possibility is that the unusual translocation is an "epiphenomenon" or a secondary manifestation of the leukemic process, rather than a necessary link in the chain of events leading to the development of the disease.

A third possiblility is that the chromosomal alteration in some way fostered the development of leukemia. Rowley has suggested that translocated chromosomal material might be inactivated[31]. Such a result could contribute to the evolution of leukemia if the translocated nucleic acid were important, for example, in normal maturation of leukocytes or in the immunologic elimination of neoplastic cells. If translocated chromosomal material becomes functionless, a complete loss of chromosome 7 might also be expected to be associated with malignancy.

Several considerations support this third hypothesis: (a) The chronology of events is appropriate: monosomy of chromosome 7 in particular (and C monosomy in general) are associated with myelodysplastic syndromes which may evolve into acute leukemia[6, 10, 11, 13]. An abnormal clone of cells in the preleukemic state may be identified by a stable karyotype which then predominates in the blast phase[9]. Moreover, those preleukemics with a variety of abnormal karyotypes are more likely to evolve into frank leukemia[32]. (b) This familial cluster includes conditions which in other populations have been associated with monosomy of chromosome 7, namely myelomonocytic leukemia, acute leukemia and Hodgkin's disease. (Two cases of CLL were found in this patient's close relatives. In the general population CLL had not been successfully studied for karyotypic abnormalities in the past because of problems in the preparation of the leukemic lymphocyte[6].) (c) Chromosome 7 is thought to contain genetic material which marks several important immunologic functions, including differentiation of granulocytes, non-HLA cell surface antigens, and Colton and Kidd blood groups[6, 33, 34]. (d) When human white cells are transformed by Simian virus 40 to malignant cells, the SV 40 T antigen gene and the SV 40 genome are found on the long arm of chromosome 7[35, 36]. (e) Genes coding for histone proteins (which may be important in regulating cell growth and differentiation) are located on the long arm of human chromosome 7[37].

The cluster of leukemia presented here may represent a chance association, a genetic predisposition, an exogenous chemical or viral agent, or an interaction of these factors. Several methods have been devised recently to test for the statistical significance of clustering in the general population[38-41]; the epidemiologic model for these methods is the transmission of an infectious agent. However, the observation of a "cluster" may stimulate an investigator to analyze the data *post facto* so that the application of the usual theories of probability is often not justifiable. While there are many studies of clustering of hematopoetic disorders in *the general population,* relatively few epidemiologic studies of these conditions *in families* have been conducted.

In adults, familial clusters of leukemia commonly include CLL alone, CLL in association with acute leukemia, or, less frequently, acute leukemia alone[42-45]. In one Swedish study, the occurrence of leukemia in a first degree relative carried a three-fold risk for CLL but no increased risk for CML[42]. There are at least 14 families that have been reported with four or more cases of leukemia among close relatives[43]. In one case report, two first cousins, both with chronic benzene exposure, were reported to have developed hematopoietic disorders, one a 36 year old shoemaker with "preleukemia" and the other a 48 year old painter with myelomonocytic leukemia and C group mosonosomy[27]. In one familial cluster of CLL, immunologic abnormalities (impaired lymphocyte transformation in response to phytohemagglutinin and decreased serum IgG) were apparent in two affected and one unaffected family member[45].

Whether CMMoL is associated with a family history of leukemia apparently has not been investigated using formal epidemiologic methods. I was unable to find another report of a familial cluster in association with a chromosomal translocation between 1 and 7 in any of the foregoing literature or in a recently published compendium of chromosomal abnormalities[6]. It should be noted that the chromosomal translocation in this patient was unlikely to have been present at birth in view of the lack of this karyotype in the patient's PHA stimulated lymphocytes.

This patient survived seven years from the time of diagnosis, and a more favorable prognosis has been suggested in myelodysplastic syndromes with a deleted or absent chromosome 7 in particular or C monosomy in general[11, 12]. On the other hand, CMMoL has a relatively favorable prognosis with a median survival of 17-24 months even where karyotype has not been considered[1, 2, 4] or where no C monosomy has occurred[3, 46]. In two studies the survival of each of the four cases with ANLL with a missing seventh chromosome was less than the median survival of 6 months[14, 15]. Whether a missing seventh chromosome has any prognostic significance may be clarified in future comparative studies.

In summary, this case raises problems of disease etiology, pathogenesis and prognosis. Of particular interest to the "bedside etiologist"[47] is whether the abnormality of chromosome 7 is a key link in disease pathogenesis or is merely an epiphenomenon of the leukemic process. The familial cluster may represent a genetic tendency or a shared exposure such as viral infection, but spontaneous clusters of disease may occur by chance and are not interpretable as formal epidemiologic hypotheses. Therefore, firm conclusions regarding these problems would be premature. Further chromosomal mapping, the development and application of immunologic markers, and follow up of families such as this one may provide answers to these questions.

## Acknowledgements

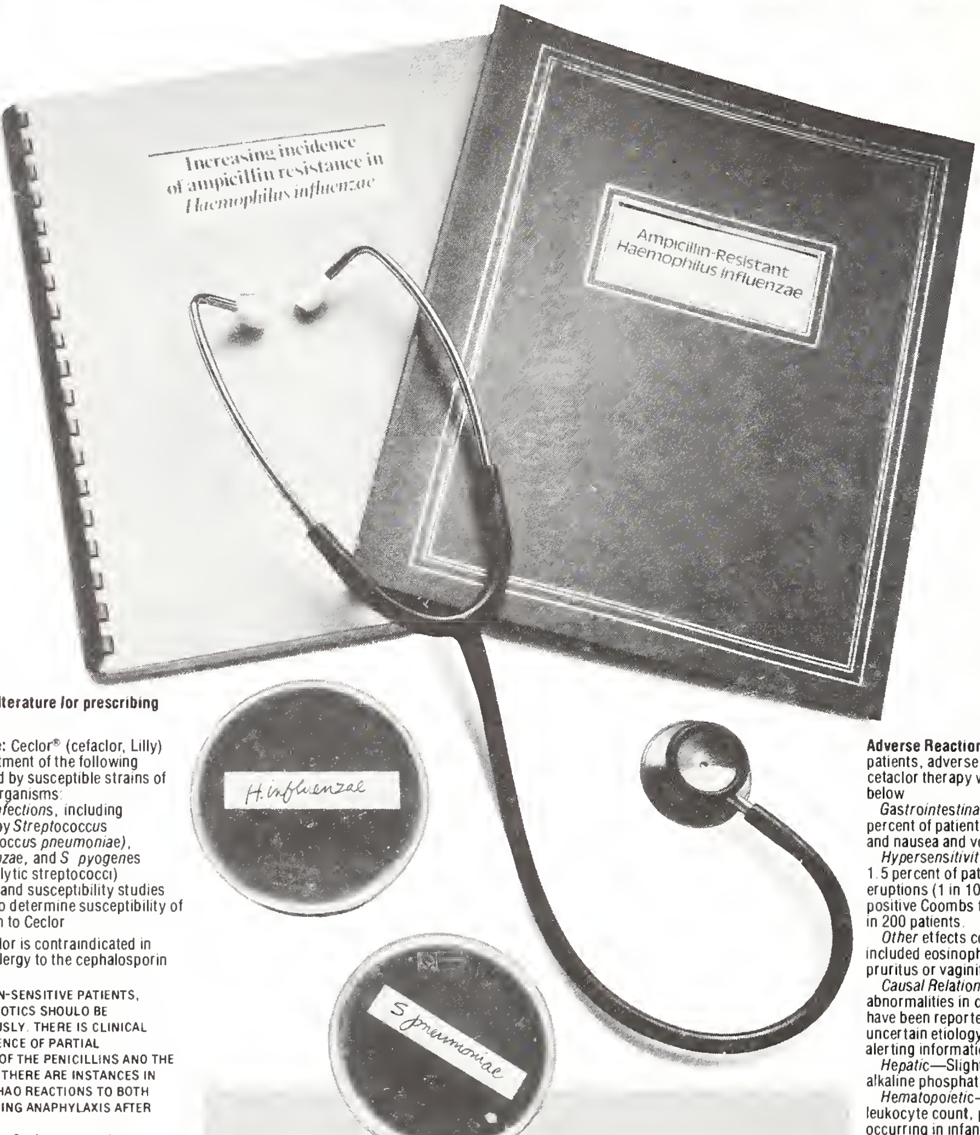
The author thanks the family of the patient herein, the Cytogenetics Laboratory of the Department of Human Genetics of Yale University for karyotyping, the Connecticut Chapter of the American College of Physicians, Dr. W. Roy Breg, Jr., Dr. Robert Burd, Ms. Gilian R. Kneubuhl, Dr. David H. Lobdell and Mr. Paul S. Nikola.

## REFERENCES

1. Gralnick HR, Galton DAG, Catovsky D et al: Classification of acute leukemia. Ann Int Med 87:740-753, 1977
2. Miescher PA, Parquet JJ: Chronic myelomonocytic leukemia in adults. Semin Heamtol 11:129-139, 1974
3. Geary CG, Catovsky D, Wiltshaw E et al: Chronic myelomonocytic leukemia. Br J Haematol 30:289-302, 1975
4. Zittoun R: Subacute and chronic myelomonocytic leukemia: A distinct haematological entity. Br J Haematol 32:1-5, 1976
5. Skinnider LF, Card RT, Padmanabh S: Chronic myelomonocytic leukemia. An ultrastructural study by transmission and scanning electron microscopy. Am J Clin Path 67:339-345, 1977
6. Sandberg AA: Chromosomes in Human Cancer and Leukemia. NYC, Elseview, 1980
7. Brodsky I, Fuscado AA, Erlick EJ et al: Effect of busulfan on oncornovirus-like activity in platelets and chromosomes in polychthemia vera and essential thrombocytopenia. J Natl Cancer Inst 59: 61-67, 1977
8. Krajincanic B, Lagarov A, Zunic A et al: Chromosome changes in patients treated with Myeleran. Strehlentherapie 151 :459-462, 1976

9. Koeffler HP, Golde DIO: Human preleukemia. Ann Int Med 93:34-353, 1980
10. Macdougall LG, Brown JA, Cohen MM et al: C-monosomy myeloproliferative syndrome—A case of 7-monosomy. J Pediatr 84:256-259, 1974
11. Zech L, Lindsten J, Uden AM et al: Monosomy 7 in two adult patients with acute myeloblastic leukemia. Scand J Haem 15:251-255, 1975
12. Larsen WE, Schimke RN: Familial acute myelogenous leukemia with associated monosomy in two affected members. Cancer 38:841-845, 1977
13. Kaufmann U, Loffler H, Foerster W et al: Fehlendes chromosom Nr 7 der praleukamischen Phase einer myeloblastenleukose bei einem Kind. Blut 29:50-61, 1974
14. Golomb HM, Vardman JW, Rowley JD et al: Correlation of clinical findings with quinacrine bonding in acute nonlymphocytic leukemia. New Eng J Med 299:613-619, 1978
15. Golomb HM, Vardiman J, Rowley JD: Acute nonlymphocytic leukemia in adults: Correlations with Q-banded chromosomes. Blood 48:9-21, 1976
16. Oshimura M, Hayata I, Kabati S et al: Chromosomes and causation of human cancer and leukemia: XVII. Banding studies in acute myeloblastic leukemia (AML). Cancer 38:748-761, 1976
17. Mitelman F, Nilsson PG, Levan G et al: Non-random chromosome changes in acute myeloid leukemia. Chromosome banding examination of 30 cases at diagnosis. Int J Cancer 68:31-38, 1976
18. Rowley JD: Chromosomes in leukemia and lymphoma. Semin Hem 15:301-319, 1978
19. Rowley JD, Golomb HM, Vardiman J: Nonrandom chromosomal abnormalities in acute nonlymphocytic leukemia in patients treated for Hodgkin's disease and non-Hodgkin's lymphoma. Blood 50:759-770, 1977
20 Rowley JD: Non-random chromosomal abnormalities in hematologic disorders in man. Proc Natl Acad Sci USA 72:152-156, 1975
21. Freireich EJ, Wang J, Tjio JH et al: (National Meeting): Refractory anemia, granulocytic hyperplasia of the bone marrow and a missing chromosome in marrow cells. A new clinical syndrome? Clin Res 12:284, 1964
22. Rowley JD, Blaisdell RK, Jacobson LD: Chromosome studies in preleukemia. I. Aneuploidy of group C chromosomes in three patients. Blood 27:782-799, 1966
23. Jackson JF, Higgins LC Jr: Group C monosomy in myelofibrosis with myeloid metaplasia. Arch Int Med 119:403-406, 1967
24. Teasdale JM, Worth AJ, Corey MJ: A missing group C chromosome in the bone marrow cells of three children with myeloproliferative disease. Cancer 25:1468-1477, 1970
25. Humbert JR, Hathaway WE, Robinson A et al: Preleukemia in children with a missing bone marrow C-chromosome and a myeloproliferative disorder. Br J Haematol 21:705-716, 1971
26. Littlefield LG, Vodopok HA: Cytogenetic studies in a patient with acute granulocytic leukemia of seven and one-half years duration. Blood 46:783-789, 1975
27. Aksay M, Frolern S, Erdogan G et al: Combination of genetic factors and chronic exposure to benzene in the etiology of leukemia. Hum Hered 26:149-153, 1976
28. Ikeuhi T, Kondo l, Sasaki M et al: Unbalanced 13q/21q translocation: A revised study of the case previously reported as 21-monosomy. Hum Genet 33:327-330, 1976
29. Gahrton G, Lindsten J, Zech L: The Philadelphia chromosome and chronic myelocytic leukemia (CML)-Still a complex relationship? Acta Med Scand 196:353-354, 1974
30. Gahrton G, Lindsten J, Zech L: Involvement of chromosomes 8, 9, 19 and 22 in Phl positive and Phl negative chronic myelocytic leukemia in the chronic or blastic stage. Acta Med Scand 196:355-360, 1974
31. Rowley JD: Mapping of human chromosomal regions related to neoplasia: Evidence from chromosomes 1 and 17. Proc Natl Acad Sci (USA) 74:5729-5733, 1977
32. Nowell P, Jensen J, Gardner F et al: Chromosome studies in "preleukemia". III. Myelofibrosis. Cancer 38:1873-1881, 1976
33. Ruutu P, Ruutu T, Vuopio P et al: Funtion of neutrophils in preleukemia. Scand J Haematol 18:317-325, 1977
34. Ruutu P, Ruutu T, Vuopio P et al: Defective chemotaxis in monosomy 7. Nature 265:146-147, 1977
35. Croce CM; Girardi AJ, Keprowski H: Assignment of the T-antigen gene of simian virus 40 to human chromosome C-7. Proc Natl Acad Sci 70:3617-3620, 1973
36. Croce C, Aden D, Koprowski H: Somatic cell hybrids between mouse peritoneal macrophages and simian virus-40 transformed human cells: II. Presence of human chromosome 7 carrying simian virus-40 genome in cells of tumors induced by hybrid cells. Proc Natl Acad Sci (USA) 72:1397-1400, 1975
37. Chandler ME, Kedes LH, Cohn RH et al: Genes coding for histone proteins in man are located on the distal end of the long arm of chromosome 7. Science 205:908-910, 1979
38. Knox G: Epidemiology of childhood leukemia in Northlumberland and Durham. Br J Prev Soc Med 18:17-24, 1964
39. Pike MC, Smith PG: A case-control approach to examine diseases for evidence of contagion, including diseases with long latent periods. Biometrics 30:263-279, 1974
40. Mantel N, Valand RS: A techique of nonparametric multivariate analysis. Biometrics 57-558, September, 1970
41. Vianna NJ, Polan AK: Epidemiologic evidence for transmission of Hodgkins disease. N Eng J Med 289:499-502, 1973
42. Gunz FW, Gunz JP, Veale AMO et al: Familial leukemia: A study of 909 families. Scand J Haem 15:117-131, 1975
43. Heath CW Jr: Hereditary factors in leukemia and lymphoma. Cancer Genetics, Lynch HT (ed) Springfield, Ill, Charles C. Thomas, 236-238, 1976
44. McPhedran P, Heath CW Jr, Lee J: Patterns of familial leukemia. Cancer 24:403-4407, 1969
45. Fraumeni JF Jr, Vogel CL, DeVita VT: Familial CLL. Ann Int Med 71:279-284, 1969
46. Hurdle ADF, Garson OM, Burst DGP: Clinical and cytogenetic studies in chronic myelomonocytic leukemia. Br J Haem 22:773-782, 1972
47. Mulvihill JJ, McKeen EA: Discussion: Genetics of multiple primary tumors: A clinical etiologic approach illustrated by three patients. Cancer 40:1867-1871, 1977

# An added complication... in the treatment of bacterial bronchitis


Increasing incidence of ampicillin resistance in Haemophilus influenzae
Ampicillin-Resistant Haemophilus influenzae
H. influenzae
S. pneumoniae

**Brief Summary.**
**Consult the package literature for prescribing information.**

**Indications and Usage:** Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

*Lower respiratory infections*, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

**Contraindication:** Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE)

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

**Precautions:** If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

*Usage in Pregnancy*—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

*Usage in Infancy*—Safety of this product for use in infants less than one month of age has not been established.

**Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

**Ceclor®**
**cefaclor**

Pulvules®, 250 and 500 mg

**Adverse Reactions:** In clinical studies in 1493 patients, adverse effects considered related to cefaclor therapy were uncommon and are listed below

*Gastrointestinal* symptoms occurred in about 2.5 percent of patients and included diarrhea (1 in 70) and nausea and vomiting (1 in 90).

*Hypersensitivity* reactions were reported in abou 1.5 percent of patients and included morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occurred in less than 1 in 200 patients.

*Other* effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

*Causal Relationship Uncertain*—Transitory abnormalities in clinical laboratory tests results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

*Hepatic*—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

*Hematopoietic*—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

*Renal*—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [070379R]

---

* Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.[8]

*Note:* Ceclor® (cefaclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

**References**
1. Antimicrob. Agents Chemother., *8*:91, 1975.
2. Antimicrob. Agents Chemother., *11*:470, 1977.
3. Antimicrob. Agents Chemother., *13*:584, 1978.
4. Antimicrob. Agents Chemother., *12*:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), II: 880. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother., *13*:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr., and J.E. Bennett), p. 487. New York: John Wiley & Sons, 1979.

Lilly

*Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.*

**Eli Lilly Industries, Inc.**
Carolina, Puerto Rico 00630

000482

# Influenza Vaccine Effectiveness: Two Epidemiological Studies, 1980 - 1981 Outbreak

LUDMIL A. CHOTKOWSKI, M.D., SABRI I. BILSEL, M.D.
AND JACK D. MALEH, M.D.

In order to determine the effectiveness of the 1980-81 influenza vaccine, the following two epidemiological studies were made. The vaccine used contained 21 mcg. of hemagglutinin (HA) per 0.5 ml dose in the ratio of seven mcg. HA each of type A Brazil, type A Bangkok, and type B Singapore.

In the first study, 200 citizens of Berlin, Connecticut, who were over age 60 were given a single 0.5 ml subcutaneous injection with a jet gun in mid-October. At the end of February, telephone follow-up revealed that 26 had influenza of which ten cases were diagnosed by their physician. Of 200 senior citizen controls not vaccinated, 13 reported influenza of which seven were diagnosed by their physician. The incidence of influenza in those vaccinated was therefore twice that in the controls, a negative effect.

No patients in the series had acute and convalescent serum determinations, but two other senior citizens not in the study had type A Bangkok increased titre verifications, indicating the prevalence of this type of influenza in the community.

The second study consisted of 184 high risk patients at Connecticut Valley Hospital, Middletown, Connecticut, ages 17 and up who were given 0.5 ml. vaccine subcutaneously, also in October.

In the 184 patients receiving the vaccine, 16 developed influenza as diagnosed by the hospital doctors for an incidence of 8.7%. In the 126 control patients on the same wards, 34 developed influenza for a control incidence of 26.9%.

The effectiveness of the vaccine in terms of reducing the incidence of influenza was therefore 67.6%.

Acute and convalescent serum determination was positive for one type A Bangkok patient, but for economic reasons the diagnosis of influenza on the remainder was made only on clinical grounds.

At the time of completion of these studies, there were in Connecticut 137 laboratory proven cases of influenza, primarily of the A Bangkok type.[1]

## Conclusion

It is apparent from these two studies that there can be a wide discrepancy in such epidemiological studies on the effectiveness of the influenza vaccine. At the Communicable Disease Center in Atlanta, Georgia, Dr. Peter Patriarca found that the vaccine was 10% to 40% effective in the only other four studies reported to the center. As a result of these studies, recommendations have been made to increase the strength of the next year's vaccine.[2]

Although epidemiological studies can be misleading, it would seem that this past year's vaccine, which fortunately contained the proper virus type for the particular outbreak predicted, did not provide for uniformly adequate protection, clinically. There is no explanation for what appears to be a negative effect of the vaccine in the senior citizen group.

REFERENCES

1. Personal communication Connecticut Department of Health Laboratories
2. Personal Communication Communicable Disease Center

---

LUDMIL A. CHOTKOWSKI, M.D., Health Director, Town of Berlin; Clinical Director of Medicine, Connecticut Valley Hospital. SABRI I. BILSEL, M.D., Internist; JACK D. MALEH, M.D., Internist; both of the Connecticut Valley Hospital, Middletown, CT.

# There's more to ZYLOPRIM® than (allopurinol).

- From Burroughs Wellcome Co. – the discoverer and developer of allopurinol
- Patient starter/conversion kits available for easy titration of initial dosage
- Patient compliance pamphlets available
- Continuing medical education materials available for physicians

**Prescribe for your patients as you would for yourself.**

*Write "D.A.W.," "No Sub," or "Medically Necessary,"*
*as your state requires, to make sure*
*your patient receives the original allopurinol.*

Wellcome / **Burroughs Wellcome Co.**
Research Triangle Park
North Carolina 27709

# Heimlich Maneuver in Cold-Water Drowning

BENJAMIN D. GORDON, M.D. AND GEORGE J. TERRANOVA, M.D.

**ABSTRACT—The use of the Heimlich maneuver[1] and its updated revisions[2, 3] in the management of acute airway obstruction is well known and widely used. Its effectiveness in over 1,100 cases has been reported by Dr. Heimlich[3] and detailed analysis of 563 reports by Hughes[5] showed good results in more than 95% of cases. The present case reports the use of the Heimlich maneuver in the Emergency Department for the expulsion of an aspirated foreign body in a case of cold-water drowning. It also illustrates the necessity to use CPR techniques even over prolonged periods of time in a case of cold-water drowning.**

## Case Report

B.V. - This two-year-old boy's father was working on a construction job at a house in proximity to a lake in Connecticut. The ambient temperature was just above freezing. His mother was helping her husband along with several other workers. The child wandered away; his mother estimated he was gone for approximately five to ten minutes before she was aware of his not being at the building site. One of the men found him lying face down in about two feet of water; the child was unconscious, apneic, cold, slightly cyanotic. They were unable to determine how long he had been lying in the water.

His mother opened his eyelids and states that his pupils appeared to be very small. He was carried to the dock and rolled onto his stomach. Someone pushed on his back and he expelled a small amount of water from his mouth. At this point the patient was very cyanotic. His mother pinched his nostrils and blew into his mouth. (She was a laboratory technician who had not been trained in CPR techniques; she had seen CPR practiced only on TV and read a few short articles about CPR in women's magazines.) She was not sure if the child's heart was beating or if he had a pulse, but she began pushing on his chest in an effort to perform the external cardiac massage techniques she had seen performed on T.V.

An ambulance was called; mother continued to perform CPR. She was unaware of the concept of 15 chest compressions and two breaths for one-man CPR, but she is relatively sure that she pressed on his chest more often than she ventilated him. Ambulance personnel arrived approximately 15 minutes later and the child was ventilated with a bag mask oxygen set. CPR was continued by both the mother and the EMT in the ambulance on the way to the hospital.

During the patient's transport to the hospital, a pulse was occasionally palpated but the patient was totally unresponsive, unconscious, and with no spontaneous breathing. At arrival in the Emergency Room parking area, the patient vomited but was not turned on his side. He arrived in the Emergency Room with a mouth full of vomitus. A code was instituted. The best estimate is that about 30 minutes had elapsed from the time he was found in the lake until the time he arrived in the Emergency Room at 2:45 P.M.

## Care in the Emergency Department

When the patient was examined, he was apneic and pulseless. He was intubated with a #5 endotracheal tube while intravenous Ringer's Lactate was started and blood drawn from an arterial puncture. The patient was intubated easily, but it was impossible to force any air through the endotracheal tube. The tube was removed, examined and the patient was re-intubated a second time once again no air could be passed through the endotracheal tube.

The physician in charge removed the endotracheal tube and performed three sharp epigastric thrusts using the technique as described by Dr. Heimlich. After the third thrust a large piece of celery was forced out of the trachea. It was removed from the pharynx, the patient was intubated once again and the patient was successfully ventilated with 100% oxygen.

A monitor was applied to the patient's chest; he was asystolic. The patient was given 22 mg of sodium bicarbonate and 5 cc of 1-10,000 epinephrine intravenously through a central line. Immediately after the infusion of epinephrine the patient's rhythm turned to ventricular fibrillation; he was given 25 mg of lidocaine and defibrillated, using 100 joules through pediatric paddles. He converted immediately to a regular sinus rhythm.

The initial laboratory data showed an arterial PH of 7.16, a PCO2 of 31, a PO2 of 274, total CO2 12 meg/1, hgb of 10.7 grs. HCT of 31.5. NA was 140, K was 5.2, glucose was 352, BUN was 15.

The patient had a #14 Levine tube passed and a large amount of greenish-brown material was evacuated from the stomach. The second set of gases was drawn immediately after the patient was converted to sinus rhythm; he now had an arterial PH of 7.08, PCO2 of 33 and a PO2 of 50. He was given a second bolus of sodium bicarbonate, and 250 mg Solu-Medrol IV to counteract cerebral edema and the expected aspiration pneumonitis.

Rectal temperature was 90°F. Hot water bottles, a heating blanket and warming lights were used to slowly warm the patient. A Foley catheter was inserted and 100 cc of clear urine were obtained. Blood pressure was found to be 60 systolic after cardiac rhythm was established. What was assumed to be some decorticate posturing was noted on the chart. The initial chest x-ray

---

BENJAMIN D. GORDON, M.D., Assistant Director; GEORGE J. TERRANOVA, M.D., Director; both of the Department of Primary Care and Emergency Medicine, Danbury Hospital, Danbury, CT.

in the Emergency Room was read as normal. Within 45 minutes after the institution of treatment, spontaneous respirations with occasional deep sighing were noted. The patient also opened his eyes, began to move his extremities when stimulated, and responded to pain.

### Course in the ICU

After an hour and forty minutes in the ER, the patient was transferred to the Intensive Care Unit. On arrival, his blood pressure was 112/70, apical pulse was 130, respirations were 40 and spontaneous, his temperature was 97.8F. His pupils reacted to light and though his left pupil was slightly larger initially they became equal in less than one hour.

A second chest x-ray now showed severe bilateral alveolar pulmonary edema. The patient was given 15 mg of Lasix and ampicillin 500 mg IV. CVP before leaving the ER was 3.0 cm of water, and by 6:00 P.M. three hours after arrival was 4.5 cm of water. The patient's urine production throughout his course continued to be adequate. Repeat chemistries done in the unit showed a K of 2.9 meg/L; 10 meg of KC1 was added to the 500 cc of 5% dextrose and half normal saline that the patient was receiving. By 7:30 P.M. the patient was restless, moving all extremities and began to open his eyes with verbal stimulation from his mother.

The child was transferred from the intensive care unit at this hospital to the Neonatal Intensive Care Unit at Yale University Hospital. He was admitted for a total of six weeks, during which time he developed and was treated successfully for pneumonia. His course was one of continued improvement and upon discharge he was found to have no neurological sequela whatsoever nor any impairment of his pulmonary function.

### Discussion

This case illustrates three points:

1. Cardiopulmonary Resuscitation, even used by individuals who are non-expert in the technique, should always be employed immediately and in some cases can be partially effective.[4]
2. The Heimlich maneuver was successful in this case.
3. Cold-water "drowning" and its resultant hypothermia although a catastrophic occurence in its own right often provides rescuers and medical personnel additional time to initiate CPR and Advanced Cardiac Life Support techniques. After a history of cold-water drowning and with hypothermia, there is considerably more than four minutes before cerebral anoxia causes irreversible brain damage. The fact should always be kept in mind when dealing with the severely hypothermic patient and in these cases CPR and other resuscitative measures should be continued for prolonged periods of time.

An editorial in *JAMA* by Dr. Samuel Vaisrub[6] reviewed the reasons why bystanders sometimes do nothing to help a person who has collapsed. Some are afraid of litigation; but McIntyre and Hamptom[7] could not find any evidence of a layman's being found liable after coming to the aid of someone in distress. A second reason, that the untrained person might "do more harm than good," was also not validated.

Copley et al[8] showed quite clearly that the timing of resuscitative efforts was much more critical than the credentials or training of the person giving help. They reported 17 patients resuscitated before arriving at the hospital: seven helped by bystanders in less than five minutes (one died and one was comatose on admission) compared to ten helped by a rescue squad after five minutes (four died and nine were comatose on admission). Similarly, Lund and Skulberg[9] studies 631 patients admitted for cardiac arrest. Seventy-five had been helped promptly by lay people; 36% survived. Of the 556 left to wait for the arrival of trained personnel, only 8% survived.

Our present case further strengthens the plea to start resuscitative efforts quickly. Despite the panic (not difficult to imagine) in this young mother, she kept doing "something", like the things she recalled seeing and reading about. As critical as the Heimlich maneuver proved to be in the Emergency Department, there would probably not have been a patient on which to work if she had just waited until "somebody who knew what to do" arrived on the scene.

The successful outcome was the result of the fortuitous combination of many factors. We did not specifically detail the American Heart Association ACLS procedures[10] used in the Emergency Department since these are accepted standards of quality care which are practiced in any reputable Emergency Department. Their importance can hardly be minimized.

### REFERENCES

1. Heimlich HJ: Pop goes the Cafe Coronary. Emergency Medicine 6:154, 1974
2. Heimlich HJ: The Heimlich Maneuver:where it stands today. Emergency Medicine 10:89-101, 1978
3. Heimlich HJ and Uhley MH:The Heimlich Maneuver. Clinical Symposia (Ciba) 31:3, p 16, 1979
4. Ibid, p 22
5. Hughes T: Computerized analysis of Dr. Henry J. Heimlich's data on 536 case reports of the application of the Heimlich maneuver. Submitted to National Research Council/Committee on Emergency Medical Services, Washington, DC 1976
6. Vaisrub S: Every Bystander a Standby. Editorial, JAMA 237:898, Feb 28, 1977
7. McIntyre KM and Hampton AG Jr: Status of Liability Risk for Out-Of-Hospital (OH) Cardiopulmonary Resuscitation. Circulation 54:224, 1976
8. Copley DP, Mantle JA, Russell RO Jr, et al:Reduction of Morbidity and Mortality with Early Cardiopulmonary Resuscitation via Bystanders. Circulation 54:225, 1976
9. Lund I and Skulberg A:Cardiopulmonary Resuscitation by Lay People. Lancet 2:702-704, 1976
10. Supplement to JAMA, vol 227, no 7, Feb 18, 1974

# Center for the Study of Ethics in the Professions

MARK S. FRANKEL, PH.D.

The Center was established at the Illinois Institute of Technology (IIT) in 1976 to develop and promote programs in education and scholarship relating to ethical and social responsibility issues in the professions. To that end, the Center applies its diverse resources, experience and counsel to the study and resolution of important theoretical and practical problems associated with professional practice.

Five years after its founding, the Center is graphic testimony to IIT's commitment to the preparation of students for careers in the problem-solving and decision-making professions. For the University recognizes that professional education must go beyond the mere technical training of students to include systematic instruction in professional responsibility. Five ethics courses have been developed at IIT by Center faculty and staff. They cover the fields of architecture and planning, business, computer science, engineering, and law. In each case, the courses were prepared by faculty from both the humanities and the respective professional field for which the course was intended. With a grant from the Exxon Educational Foundation, the Center will soon embark on a two-year project to develop a series of instructional modules for use in engineering ethics and related fields at colleges and in continuing education programs throughout the country.

In addition to reaching students in the traditional classroom setting, the Center has prepared workshops and seminars for educators and practitioners. With support from the National Science Foundation and the National Endowment for the Humanities, the Center was host to a series of workshops in engineering ethics for educators in the summer 1979. Twenty-four teachers of philosophy and engineering came to IIT to exchange ideas and methods with CSEP faculty and staff and outside specialists so they might be better prepared to teach engineering ethics at their respective home institutions. The program was highly successful, and supplemental funding was granted in order to continue the activities of the workshops beyond the initial year's effort. The Center is also prepared to tailor special educational programs and seminars to the specific needs of user groups (e.g., professional societies, businesses, and government agencies).

Research in applied ethics and public policy by the Center's faculty and staff covers a wide range of issues associated with professional education and practice. Research is underway in such fields as architecture, engineering, health care, business, law, science and technology, and journalism. There are also studies of a broader conceptual and theoretical nature to which philosophers, social scientists, and legal scholars contribute on a continuing basis. The notion of "professional ethics" and the issues it raises are exceedingly complex and can best be unraveled through interdisciplinary study, an approach that has been employed effectively at the Center for several years.

The Center is also actively involved in promoting public discussion and analysis of issues concerning the professions. One such effort is the Professional Ethics Luncheon Seminar Series, a unique forum for examining matters important to the professions and those they serve. Seminar participants are drawn from government, academe, consumer groups, professional societies and practicing professionals throughout the Chicago area. The topics selected touch on a variety of issues, reflecting the diverse group of persons participating in the seminars and the complexity of the issues associated with their work. The 1980-81 Series, for example, included seminars on the role of the Federal Trade Commission vis-a-vis the professions, the draft Model Rules of Professional Conduct under consideration by the American Bar Association, and fraud in science.

Further evidence of the Center's commitment to see that these issues have a wide hearing is its co-sponsorship (with the Society for the Study of Professional Ethics) of a symposium entitled, "Do the Engineering and Scientific Societies Have a Role in Promoting Ethical Conduct Among Their Members?," at the 1981 Meeting of the American Association for

---

MARK S. FRANKEL, Ph.D., Director of the Center for the Study of Ethics in the Professions, Illinois Institute of Technology, Chicago, Ill., 60616.

the Advancement of Science. And with support from the National Science Foundation, the Center will host the Second National Conference on Ethics in Engineering in March 1982. Plans are also underway to collaborate with a local radio station to produce a series of one-hour programs on the ethical and responsibility issues with which the professions must grapple in contemporary society.

In support of the above activities, the Center manages a diverse publications program, including an Occasional Papers Series, a quarterly publication—PERSPECTIVES ON THE PROFESSIONS—and specialized reports and bibliographies. The Center is recognized as a major repository of information on the professions and maintains a resource collection which includes monographs, professional directories, government reports, hearings and regulations, court decisions, journals and newsletters, dissertations, unpublished papers and conference proceedings. Also included is an extensive inventory of statements relating to standards of professional responsibility and freedom as adopted by professional and trade associations, business organizations, government bodies and other groups concerned with the rights and responsibilities of professionals. In the belief that these statements can serve useful educational and research purposes, the Center publishes a COMPILATION of the statements currently in the collection, most of which can be obtained from CSEP. A referral bank of over two hundred organizations and programs whose activities intersect with the interests of the Center is also maintained as part of the resource collection. The collection is open to all, bibliographic searches may be requested, and visitors are welcome as are inquiries by phone or mail.

**Is alcohol a problem for you or someone close?**

If alcohol is affecting your life and the lives of those around you, you should realize that alcoholism can be successfully treated at any stage.

At Edgehill Newport, a staff of alcoholism experts develops for each patient a structured treatment program including medical detoxification followed by education and individualized counseling.

There is a 28-day residential program for the alcoholic, and a 3½-day resident plan for family members. Counseling is also available for those not sure they need treatment.

Edgehill Newport is devoted to the alcoholic's effective recovery and confident return to productive living.

Blue Cross and many insurers include treatment for alcoholism in some or all of their health insurance policies, and recognize Edgehill Newport as an approved treatment facility.

For information, call 401/849-5700, ext. 400. Or write: Edgehill Newport, 200 JJ Harrison Avenue, Newport, R.I. 02840

**Edgehill Newport**
JCAH Accredited

# Pneumococcal Polysaccharide Vaccine

CENTERS FOR DISEASE CONTROL
H.E.W., Public Health Service, Atlanta, GA.

## Introduction

Polyvalent polysaccharide vaccine against disease caused by *Streptococcus pneumoniae* (pneumococcus) was licensed in the United States in 1977. This statement includes a summary of current knowledge about the vaccine and a guide to its use in selected persons and groups.

## Vaccine-Preventable Pneumococcal Disease

Data on the precise occurrence of serious pneumococcal diseases in the United States are not available. Estimates come from limited surveys, research reports, and several community-based studies. (Table 2).

TABLE 2

*Estimated occurrence of serious pneumococcal disease, United States*

| Pneumococcal disease | Estimated cases (thousands/yr) | Estimated incidence* | Case-fatality ratio (%) |
|---|---|---|---|
| Pneumonia | 150-570 | 68-260 | 5-7 |
| Meningitis (1) | 2.6-6.2 | 1.2-2.8 | 32 |
| Bacteremia (2) | 16-55 | 7-25 | 20 |

*Per 100,000 population/yr.

Community studies indicate that pneumococcal pneumonia usually represents less than 25% of all cases of pneumonia. Yet, it remains an important problem, even in the antibiotic era, because of the substantial annual numbers of cases and deaths that occur.

Pneumococcal pneumonia occurs in all age groups, although incidence increases with age over 40 years. Pneumococcal meningitis is seen primarily in young children, particularly those ⩽2 years old. Mortality from pneumococcal disease is highest in patients who have bacteremia or meningitis, in patients with underlying medical conditions, and in older persons.

Patients with certain chronic conditions are clearly at increased risk of developing pneumococcal infection as well as experiencing more severe pneumococcal illness. These conditions include sickle cell anemia, multiple myeloma, cirrhosis, renal failure, splenic dysfunction, and having had a splenectomy or organ transplant. Other patients may be at great risk of developing pneumococcal infection or having more severe illness as a result of being alcoholic or having diabetes mellitus, congestive heart failure, chronic pulmonary disease, or conditions associated with immunosuppression. Patients with cerebrospinal fluid leakage complicating skull fracture or neurosurgical procedure can have recurrent pneumococcal meningitis.

Surveillance of the antibiotic susceptibilities of recent *S. pneumoniae* isolates has not indicated any trend toward increased resistance to penicillin. From 1978 to 1980, less than 2% of clinically significant isolates of *S. pneumoniae* were relatively penicillin-resistant (MIC* 0.1-0.9 $\mu$g/ml). Penicillin remains the antimicrobial agent of choice for treatment of invasive pneumococcal disease.

## Pneumococcal Polysaccharide Vaccines

The pneumococcal vaccine licensed in 1977 for use in the United States contains purified capsular material of 14 types of *S. pneumoniae* (Danish types 1,2,3,4, 6A,7F,8,9N,12F,14,18C,19F,23F, and 25). When the vaccine is being prepared, polysaccharides are extracted separately and combined in a final product. Each dose of vaccine contains 50 $\mu$g of each polysaccharide. The 14 bacterial types represented in the vaccine are responsible for 68% of bacteremic pneumococcal disease in the United States.[3] An additional 17% of bacteremic pneumococcal disease is due to serotypes immunologically related to types in the vaccine. Studies of the cross-reactivity of human antibodies against related types suggest that cross-protection may occur among some of these types (for example, 6A and 6B).[4]

Most healthy adults respond to the vaccine and in 2-3 weeks show a 2-fold rise in type-specific antibody, as measured by radioimmunoassay. The titer of antibody which is protective against each serotype has not been determined.

*Morbidity and Mortality Weekly Report, August 28, 1981. Vol. 30, No. 33.*

---

*Minimal inhibitory concentration.

### Effectiveness of Pneumococcal Polysaccharide Vaccines

Several pneumococcal vaccines were developed and tested in the 1920s, 1930s, and 1940s. An unblinded trial of a trivalent vaccine was performed from 1937 to 1943 in an elderly institutionalized population.[5] Protection was demonstrated against pneumonia and bacteremia due both to pneumococcal types in the vaccine and to ones that were not in the vaccine. A tetravalent polysaccharide vaccine tested in 1944 in a young male military population with a high endemic rate of disease prevented pneumonia caused by types in the vaccine.[6] Disease due to other types was not prevented. A combined pneumococcal polysaccharide vaccine was distributed in the United States from 1945 to 1947. However, when effective antibiotics became available, the vaccine was infrequently used, and the manufacturer voluntarily discontinued production.

In the 1970s, a 12-valent pneumococcal vaccine was field tested in South Africa in healthy, young, adult gold-miner recruits among whom there was a high annual incidence of pneumococcal pneumonia—200 cases/1,000 persons/year.[7] This vaccine conferred type-specific protection, significantly reducing the frequency of pneumococcal pneumonia and general respiratory morbidity. When 14-valent vaccine was tested in a native population in New Guinea, where there was a large amont of acute and chronic respiratory disease, much of it caused by the pneumococcus, pneumonia morbidity and mortality was significantly reduced.[8]

Two randomized, controlled trials of pneumococcal vaccine in older-age adults have been conducted in the United States.[9] One was in outpatients over 45 years old and the other was in inpatients of a chronic-care psychiatric facility. In neither study was there any difference in the occurrence of respiratory morbidity and mortality between those vaccinated with a polyvalent pneumococcal vaccine and those given a placebo. In the first study, data suggested some vaccine protection against bacteremic pneumococcal disease, but the incidence of pneumococcal disease was low (less than 2.5/1,000 population/year) and may not have enabled a valid assessment of vaccine efficacy. In the other study, there were no fewer cases of radiologically diagnosed pneumonia among vaccinees than among controls.

The data from these 2 trials were analyzed using a case definition based on seroconversion to a vaccine serotype and radiographic documentation of pneumonia. With this case definition, vaccine efficacy of 80% - 100% was calculated. However, because persons who have been vaccinated do not show an increase in antibody titer on revaccination, vaccinees may have been unable to seroconvert to a natural infection, making it difficult to document cases in vaccinees. The vaccine efficacy based on this case definition could therefore be overestimated.

There have been only a few studies of pneumococcal vaccine efficacy in children. The vaccine was generally found to be less antigenic for children <2 years old than for other vaccinees. However, in a small nonrandomized study of children and young adults 2 - 25 years old who had sickle cell anemia or had had splenectomy, occurrence of bacteremic pneumococcal disease was found to be significantly reduced by immunization with an 8-valent vaccine.[10]

A recently proposed method to evaluate protection with pneumococcal vaccine compares the distribution of serotypes of pneumococci isolated from the blood or cerebrospinal fluid of vaccinated and unvaccinated patients.[11] When this method was used to compare 36 vaccinated patients >10 years old—unclassified with respect to underlying medical conditions—with about 10 times that many comparable unvaccinated controls, a vaccine efficacy rate of 49% was found (66%, if only patients with blood isolates were considered.) As more patients become available for evaluation, estimates for specific diagnostic categories can be made, and the broad confidence intervals now associated with the analysis, reduced.

The duration of protection induced by vaccination is unknown. Studies of persistence of elevated antibody titers are ongoing; currently available data show elevation of titers 3 - 5 years after immunization.

### Side effects and adverse reactions

About half of those given pneumococcal vaccine develop side effects such as erythema and mild pain at the site of injection. Severe adverse effects such as anaphylactoid reactions have been quite rare—about 5/million doses administered.

Severe local and systemic reactions have been common among adults given second doses.[12] They are thought to result from localized antigen-antibody reactions involving antibody induced by previous vaccination. Whether prior infection with the *S. pneumoniae* types represented in the vaccine will result in comparable local reactions after vaccination is unknown. Several studies indicate that pneumococcal vaccine and influenza vaccine can be given at different sites at the same time without an increase in side effects,[13] but it should be emphasized that pneumococcal vaccine should be given *only once* to adults. Data on revaccination of children are not yet sufficient to provide a basis for comment.

### Vaccine usage

The currently available 14-valent pneumococcal vaccine (as well as the earlier pneumococcal vaccines) has been shown in selected populations to reduce by approximately 80% the incidence of pneumonia with bacteremia caused by *S. pneumoniae* types represented in the vaccines. In extrapolating this information for recommendations on vaccine use, it is important to recognize that data on effectiveness have come predominantly from studies in groups of adults who were at increased risk of disease but who were not chronically ill. Because age and some chronic illnesses apparently predispose individuals to more severe pneumococcal disease, it would be ideal if recommendations on immunization could be based on definitive clinical trials in groups of elderly patients and patients with chronic illnesses. While data on pneumococcal vaccine effectiveness in chronically ill persons and in others continue to accumulate, they are not yet sufficient for conclusive interpretations. Therefore, the Committee's recommendations that follow are derived from admittedly limited data.

1. On the basis of preliminary evidence, persons>2 years old who have splenic dysfunction or anatomic asplenia should benefit from immunization. Vaccine failures have been reported, perhaps due to impairment of antibody responsiveness, but vaccination is recommended for such patients because they are known to be at high risk of developing fatal bacteremia.

2 Adults and children>2 years old with chronic illnesses which are or appear to be associated with an increased risk of pneumococcal disease or its complications (see above) should be considered candidates for vaccination. Vaccine may be increasingly beneficial as these patients grow older because the elderly are at increased risk of dying from pneumococcal infections. Vaccine efficacy in these groups needs further evaluation and is currently under study.

3. There can be acute outbreaks or a high rate of endemic pneumococcal disease in some populations, such as in nursing homes and other institutions where there is increased risk that the disease will be severe. Under these conditions, vaccination of the entire closed population should be considered.

4. Localized outbreaks of pneumococcal disease caused by types represented in the vaccine can occur in the general population, albeit rarely. In such instances, selective immunization of those at high risk should be considered.

5. There are not yet sufficient data with which to formulate a recommendation on routine use of pneumococcal vaccine in immunization programs for the general population, including the elderly. This should not preclude health-care providers from giving vaccine to unimmunized healthy persons who, in their judgment, might benefit.

## Precautions

The safety of pneumococcal vaccine in pregnant women has not been evaluated. It should not be given during pregnancy unless the risk of infection is substantially increased.

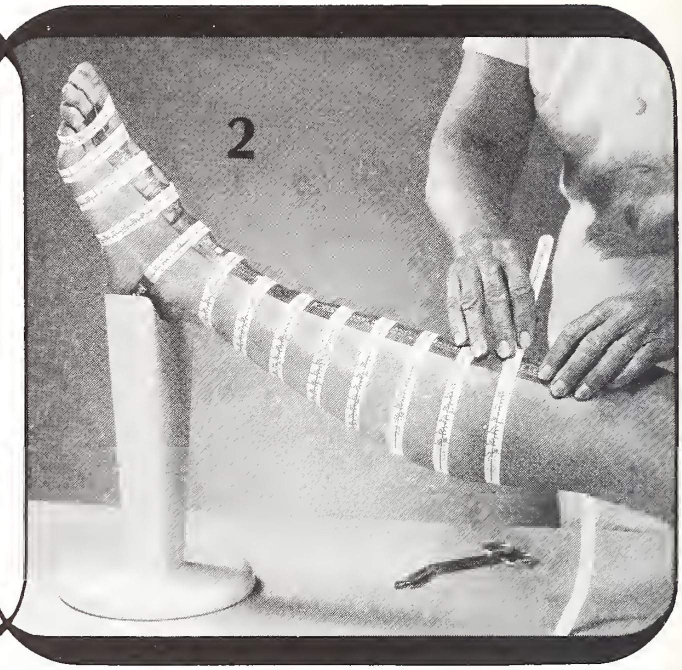
Because of a marked increase in adverse reactions with reinjection of pneumococcal vaccine, second or "booster" doses should *not* be given, at least at this time.

Complete records on vaccination can help to avoid repeat doses.

## REFERENCES

1. Fraser DW, Darby CP, Kochler RE, Jacobs CF, Feldman RA. Risk factors in bacterial meningitis: Charleston County, South Carolina. J Infect Dis 127:271-7, 1973
2. Filice GA, Darby CP, Fraser DW. Pneumococcal bacteremia in Charleston County, South Carolina. Am J Epidemiol 112:828-35, 1980
3. Broome CV, Facklam RR. Epidemiology of clinically significant isolates of Streptococcus pneumoniae in the United States. Review of Infectious Diseases 3:277-80, 1981
4. Robbins JB, Lee CJ, Rastogi SC, Schiffman G, Henrichsen J. Comparative immunogenicity of group 6 pneumococcal type 6A(6) and type 6B(26) capsular polysaccharides. Infect Immun 26:1116-22, 1979
5. Kaufman P. Pneumonia in old age. Active immunization against pneumonia with pneumonococcus polysaccharide; results of 6-year study. Arch Intern Med 79:518-31, 1947
6. MacLeod CM, Hodges RG, Heidelberger M, Bernhard WG. Prevention of pneumococcal pneumonia by immunization with specific capsular polysaccharides. J Exp Med 82:445-65, 1945
7. Austrian R, Douglas RM, Schiffman G, et al. Prevention of pneumococcal pneumonia by vaccination. Trans Assoc Am Physicians 89:184-94, 1976
8. Riley ID, Andrews M, Howard R, et al. Immunisation with a polyvalent pneumococcal vaccine: reduction of adult respiratory mortality in a New Guinea Highlands community. Lancet 1:1338-41, 1977
9. Austrian R. Surveillance of pneumococcal infection for field trials of polyvalent pneumococcal vaccines. Report DAB-VDP-12-84, National Institutes of Health, 1980
10. Ammann AJ, Addiego J, Wara DW, Lubin B, Smith WB, Mentzer WC. Polyvalent pneumococcal-polysaccharide immunization of patients with sickle-cell anemia and patients with splenectomy. N Engl J Med 297:897-900, 1977
11. Broome CV, Facklam RR, Fraser DW. Pneumococcal disease after pneumococcal vaccination: an alternative method to estimate the efficacy of pneumococcal vaccine. N Engl J Med 303:549-52, 1980
12. Borgono JM, McLean AA, Vella PP, et al. Vaccination and revaccination with polyvalent pneumococcal polysaccharide vaccines in adults and infants (40010). Proc Soc Exp Biol Med 157:148-54, 1978
13. Mufson MA, Krause HE, Tarrant CJ, Schiffman G, Cano FR. Polyvalent pneumococcal vaccine given alone and in combination with bivalent influenza virus vaccine (40804). Proc Soc Exp Biol Med 163:498-503, 1980

1


2

# Twin Engineering Devices, to Reduce Massive Lymphedema, and Maintain the Reduction.

Massive and obstinate lymphedema of the limbs may be reduced through use of the Jobst Extremity Pumps (Intermittent Compression) (photo 1). Its controlled pneumatic massage gently removes edema fluid from congested areas.

Jobst Extremity Pumps are available in hospital, clinical, and home models (shown), the latter being available on rental. All units have controls to vary both pressure and time cycles.

When the desired reduction is attained, it can be maintained with a *Jobst Venous Pressure Gradient®* Support. These supports are custom-made to your prescription and the patient's individual measurements (photo 2). You may prescribe exact counterpressures. "In-Patient" orders will be given special attention.

**Contact your local Jobst Service Center for complete details.**

®

**JOBST SERVICE CENTER**
Suite 105
The Hartford Medical Arts Building
100 Retreat Ave.
Hartford, Connecticut 06106
203/246-1668

# Current Status of Continuing Medical Education

## AMA COUNCIL ON MEDICAL EDUCATION

The last comprehensive survey of continuing medical education (CME) was conducted by the American Medical Association in the mid-1950's. Since that time many changes have taken place in the practice of medicine, in the providing of health care in the United States, and in the requirement of continuing medical education for a variety of purposes. In order to assess the impact of these changes on the needs for and the uses of CME, the AMA contracted with Market Opinion Research (MOR) to conduct a new national survey of CME among physicians.* This study was designed to focus on the current forms and amounts of CME used by physicians, their perception of its quality, their perception of areas of their greatest need, their preferences among the various CME modalities, and other related issues. The survey also included an analysis of these issues on such variables as years since graduation from medical school, length of residency training, specialty type of practice, and the location of the physician's practice. Finally, the results of this study, whenever possible, were to be compared witht the findings of the earlier "Vollan Study."

### Survey Methodology

A systematic random sample of 8,638 physicians was drawn from the 1979 AMA Physician Master File tapes. (This file contained all M.D.'s licensed in the continental U.S.). The file sample excluded all interns, residents and retired physicians. After one original mailing, followed by two follow-up mailings to nonrespondents, 3,563 completed ten-page questionnaires were returned by the cut-off date established for data processing. A total of 612 questionnaires were eliminated from the total base because they were either post office returns (as a result of old, nonforwardable addresses), or because the physicians were interns, resident or retirees, or were reported deceased. The remainder was a base of 3,563 completed questionnaires received before the cut-off period from eligible physicians. This represents a 45% return rate, which is substantially higher than that of 29.3% return rate in the original Vollan Study. The differences between the actual respondents and the total selected sample do not differ by more than a few percent. The only exception is the variability of AMA membership, since AMA members are more likely to respond (by 9.6%). To adjust for this slight bias, the data were weighted so that AMA membership is proportionate to the original "mailed sample" (54%). Thus, all data presented have been weighted to adjust for AMA membership, and therefore, the total number of respondents in the study equals 3,551 instead of 3,563.

### Type and Frequency of Continuing Medical Education Use Among Physicians

Physicians were asked a series of questions related to the type and frequency of CME-related activities they presently engage in. Topic areas included the frequency of CME activities, the numbers of hours spent in selected activities, and the total amount of time spent in the last year (1979) on formal CME courses or programs.

### Activities/Frequency

Physicians were presented a list of nineteen CME-related activities and asked to designate how often they participated in each activity; and abstract of the results is displayed in Table I.

Table I

FREQUENCY OF PHYSICIAN PARTICIPATION IN VARIOUS CME ACTIVITIES

| | *Average* Frequency* |
|---|---|
| Reading Journals and Books | 1.10 |
| Consultation or Discussion | 1.36 |
| "In-Hospital Programs" (Tumor Conferences, CPC's, Staff Meetings etc.) | 1.54 |
| Meetings Sponsored by Medical Societies (County, State or AMA) | 3.88 |
| Dial Access Consultation Programs | 4.46 |
| Clinical Traineeships or Mini-Residencies | 4.44 |
| Correspondence Courses | 4.26 |

*Average based on a 5-point scale:
1 = weekly
2 = monthly
3 = yearly
4 = less than yearly
5 = never

---

* Cost of this survey, exclusive of AMA staff time, was $37,700.

*EDITOR'S NOTE: This is a report of the AMA Council on Medical Education to the House of Delegates at its Interim Meeting in December, 1980.*

Only the top three activities in frequency of participation are listed along with the four activities in which physicians participated least. As far as frequency of physician participation is concerned the three top activities are the reading of journals and books, consultation or discussions, and in-hospital programs. Those activities in which physicians are least likely to be involved are dial access consultation programs, clinical traineeships or mini-residencies and correspondence courses. The frequency of some activities measured is often related to the major professional activity (base of practice) of the physicians. For example, physicians who participate in medical teaching and research are more likely to participate in hospital-based activities as well as in activities grounded in academics (for example: more reading, consultation and discussion, in-hospital programs, use of hospital library resources, teaching, as well as preparation of scholarly papers and books).

### Additional Activities

Physicians were also asked to indicate the hours per week spent on the following activities: medical reading, medical audit, patient-related hospital meetings, consultations and audio-visual programs. Over-all, physicians spend an average of 4.08 hours per week on consultations. However, the amount of time spent on consultation varies greatly by area of specialty. General practitioners spend, on the average, a little more than an hour on consultations, while physicians in other specialties usually spend substantially more time on consultations per week. Physicians specializing in internal medicine and other medical specialties and in general surgery and other surgical specialties tend to spend more time over-all in consultation.

Physicians spend an average of 5.5 hours per week on medical reading, but those specializing in internal medicine or in other medical specialties spend an average of over 6.5 hours per week, making medical reading the most frequent of these CME-related activities for medical specialists.

On the average physicians spend less than one hour per week on audio-visual programs and medical audits.

In 1979 physicians spent an average of 12.73 days attending CME courses. General practitioners, general surgeons, and anesthesiologists and other medical and surgical specialists tend to spend more time than their colleagues in formal CME courses or programs.

## The Cost of Continuing Medical Education

The attitudes of physicians on the cost of continuing medical education are summarized in Table II. Forty-four percent say that the cost is excessively high; 35% say that it is reasonable. Less than one percent say that it is lower than expected. Only psychiatrists stand out with 24% of these professionals saying that CME is reasonable. Of all physicians, obstetricians/gynecologists think the cost of CME is least reasonable, since only 12% of them tend to say that costs are reasonable.

**Table II**

PHYSICIANS' ATTITUDES ON THE COST OF CONTINUING MEDICAL EDUCATION

| | |
|---|---|
| Excessively High | 44% |
| High, but Justified | 35 |
| Reasonable | 17 |
| Lower than Expected | <1 |

Table III summarizes the replies to the question of approximately how much money did the physician spend in formal CME programs during 1979. Table III shows that only 6% of the physicians reported spending over a thousand dollars (average $428.19) in 1979 for tuition and other direct CME charges, but

**Table III**

APPROXIMATELY HOW MUCH MONEY HAS YOUR PARTICIPATION IN FORMAL CME PROGRAMS COST YOU DURING 1979 FOR EACH OF THE FOLLOWING

| | *Total Sample (N = 3,551)* |
|---|---|
| *Tuition Fees and Other Direct Charges* | |
| $0-$100 | 19% |
| $101-$500 | 49 |
| $501-$1,000 | 15 |
| $1,001-$2,000 | 4 |
| More than $2,000 | 2 |
| Average | $ 428.19 |
| *Travel Expenses* | |
| $0-$100 | 17% |
| $101-$500 | 21 |
| $501-$1,000 | 24 |
| $1,001-$2,000 | 17 |
| More than $2,000 | 9 |
| Average | $ 969.52 |
| *Indirect Costs (Lost Income from Practice)* | |
| $0-$100 | 37 |
| $101-$500 | 5 |
| $501-$1,000 | 8 |
| $1,001-$2,000 | 11 |
| More than $2,000 | 25 |
| Average | $1,880.83 |
| *Cost of Professional Society Dues* | |
| $0-$100 | 16% |
| $101-$500 | 38 |
| $501-$1,000 | 28 |
| $1,001-$2,000 | 6 |
| More than $2,000 | 2 |
| Average | $536.23 |
| *Cost of Books, Journals, Self-Assessment Courses* | |
| $0-$100 | 30% |
| $101-$500 | 50 |
| $501-$1,000 | 7 |
| $1,001-$2,000 | 2 |
| More than $2,000 | 1 |
| Average | $287.05 |
| *Other Expenses* | |
| $0-$100 | 75% |
| $101-$500 | 1 |
| $501-$1,000 | * |
| $1,001-$2,000 | 1 |
| More than $2,000 | 2 |
| Average | $104.97 |

*Less than .5%

26% reported spending this much for travel expenses (average $969.52). The highest amount physicians reported is for indirect costs resulting from loss of income from practice. Here 36% of the physicians said that this cost them over a thousand dollars (average $1,880.83) in 1979. The cost for professional society dues, reading materials and other expenses, however, was five hundred dollars or less for the majority of physicians in 1979. All physicians spent an average of $287.05 on books, journals, self-assessment courses, etc., and an average of $104.97 for other CME-related experiences.

The total cost involved in physicians' activities in CME reveals that 19% of all physicians spent over $5,000 for CME in 1979, but the higher amounts were spent by surgical specialists and general surgeons, whereas office-based physicians spent least. These data are summarized in Table IV. Data not included in this table also show that pediatricians, physicians in institutional practice, physicians who are in teaching, administration, or research, or who are hospital-based, all tend to have spent substantially less for CME in 1979.

Table IV

PERCENT OF PHYSICIANS SPENDING MORE THAN $5,000 PER YEAR ON CME

| | |
|---|---|
| All Physicians | 19% |
| Other Surgical Specialists | 37 |
| General Surgeons | 25 |
| Solo-Based Physicians | 24 |
| Partnership-Based Physicians | 24 |
| AMA Members | 23 |
| Office-Based Physicians | 22 |

A partial comparison between the opinions of physicians on the desired sources of funding for CME, as recorded in the 1955 data of the Vollan Study and the 1980 data, is presented in Table V. It is extremely interesting that the attitude of physicians that they should be the source of funding of their own CME varied only by 0.4% over a period of twenty-five years, and that their attitudes regarding the state and local medical societies as funding sources varied only by three percent, and the medical schools as sources by five percent.

Table V

WHAT SHOULD BE THE SOURCES OF FUNDING FOR CME

| | *1955* | *1980* |
|---|---|---|
| Physicians | 85% | 83.6% |
| State and Local Medical Societies | 52 | 55.0 |
| Specialty Societies | 50 | |
| Medical Schools | 45 | 50.0 |
| State and Local Health Departments | 28 | 28.0 |
| Voluntary Health Agencies | 22 | |
| Other Funding | 18 | |

## Physicians' Attitudes Toward and Perceptions of Continuing Medical Education

When physicians were asked in 1955 to rate which methods of "postgraduate medical education" were of considerable value, 70% said seminars, 55% said demonstrations, 49% lectures and panels, and 45% supervised clinical case work. The lowest rating was for telephone, radio and recordings 4%; these and other data are presented in Table VI.

Table VI

METHODS OF POSTGRADUATE MEDICAL EDUCATION RATED TO HAVE "CONSIDERABLE VALUE" (VOLLAN STUDY, 1955)

| | |
|---|---|
| Seminars | 70% |
| Demonstrations | 55 |
| Lectures and Panels | 49 |
| Supervised Clinical Case Work | 45 |
| Motion Pictures and TV | 27 |
| Laboratory Work | 13 |
| Telephone, Radio and Recordings | 4 |

Physicians' evaluations of CME are not only related to quality of the programs, but to the quality of institutions which offer them as well. Fifty-nine percent of the respondents thought that it is "very important" that CME be offered by accredited institutions. It is of particular interest that 74% of physicians who teach reported this, and that 73% of those physicians who have five or less years since graduation from medical school agreed. This same view is shared by 63% of physicians who are over 65 years of age, by 63% of physicians who graduated over 35 years ago, by 66% of physicians who work in administration, and by 69% of physicians who are less than 35 years old.

On a related issue physicians were also asked if they felt formal accreditation of institutions and organizations improved with CME. Their responses to this question can be summarized as follows: 49% said that formal accreditation of institutions and organizations has improved CME, whereas 28% said they did not know. Among those who said "yes" to the question, 63% were physicians working in administration, 74% were physicians between 46 and 65 years of age, and 57% were obstetricians/gynecologists.

Forty-two percent of all physicians feel that sports or recreational activities in conjunction with CME is of interest to them; the majority (52%) feel that this *would not* be of interest to them. However, as one would expect, younger physicians tend to be much more interested in associating sports or recreational activities with CME than are older physicians. The data also show that physicians in group practice favor sports and recreational activities more often in conjunction with CME. Those physicians in the East South Central States are more supportive of recreational activities than those from other geographical regions.

Table VII summarizes the data regarding the degree of preference of physicians for each type of CME activity for keeping up to date in matters pertaining to patient care. Clearly meetings or courses sponsored by medical schools or by medical societies (county, district, state or AMA) are the most preferred CME activities, whereas correspondence courses, dial access consultation programs and consultation or discussions are lowest in preference ratings.

Table VII

FOR EACH OF THE ACTIVITIES THAT FOLLOW INDICATE YOUR DEGREE OF PREFFRENCE ON EACH FOR CONTINUING YOUR MEDICAL EDUCATON AND KEEPING UP-TO-DATE IN MATTERS PERTAINING TO PATIENT CARE

| | *Total Sample Averages** |
|---|---|
| Meetings or Courses Sponsored by Medical Schools | 1.07 |
| Meetings Sponsored by Medical Societies (County, District, State or AMA) | 1.45 |
| Scientific Meetings Sponsored by National, State, Local Specialty Societies | 1.61 |
| Teaching Colleagues, House Staff, Health Personnel (Including Preparation) | 1.70 |
| Preparation of Articles, Papers, Books or Exhibits | 1.75 |
| In-Hospital Programs (Tumor Conferences, Department or Staff Meetings, Lectures, CPC's, etc.) | 1.97 |
| Clinical Traineeships or Mini-Residencies | 2.40 |
| Self-Study Video Cassette Courses | 2.44 |
| Reading of Journals and Books | 2.45 |
| Preparation for Recertification | 2.45 |
| Correspondence Courses | 2.59 |
| Dial Access Consultation Programs | 2.70 |
| Consultation or Discussion | 2.80 |

BASE - 3551

*Averages are based on the following code:
High Preference = 1
Medium Preference = 2
Low Preference = 3

When physicians were asked if they would like access to computerized self-assessment programs, some very interesting results were obtained. Sixty-six percent of physicians replied in the affirmative, and among those more supportive of this view are the categories listed in Table VIII. Physicians less than 35 years of age (78%) and those involved in teaching (73%) and in research (74%) are also supportive. It is clear that recent graduates from medical school have had sufficient contact with computers in their education to see their value in administration of self-assessment programs.

Table VIII

SIXTY-SIX PERCENT (66%) OF THE PHYSICIANS SAY THEY WOULD LIKE ACCESS TO COMPUTERIZED SELF-ASSESSMENT PROGRAMS THOSE WHO ARE MOST SUPPORTIVE OF THIS TEND TO BE.

| | |
|---|---|
| Teaching | 73% |
| Working in Research | 74 |
| Less than 35 Years Old | 78 |
| Recent Graduates from Medical School | 82-75 |
| In Favor of CME Via Cable TV | 76 |
| Recommending Over 15 Hours per Week of CME for Their Specialty | 80 |

When physicians were asked for any additional comments regarding their attitudes toward CME, it is interesting that all of the top ten most frequent comments were of a negative character. Those top ten comments are listed in Table IX.

Table IX

ADDITIONAL COMMENTS ON CME (TOP TEN MENTIONS ONLY)

| | |
|---|---|
| Cost Too Much | 10% |
| CME Should Be Voluntary, Not Mandatory | 8 |
| CME Should Not Be Required | 8 |
| CME Has Become Big Business | 7 |
| Questioned Quality of CME | 7 |
| CME Courses Very Helpful | 7 |
| Recertification Unnecessary | 7 |
| CME Worthless—Not Effective | 6 |
| Expensive Courses in Exotic Places | 6 |
| Peer Review at Local Level to Judge Doctors | 6 |

BASE - 841

## Continuing Medical Education Requirements for Physicians

When asked if they were required to fulfill a state medical society membership requirement for CME, 30% of all physicians answered in the affirmative. When asked if their specialty society membership depended upon the CME requirement, 27% of all physicians replied in the affirmative. Fifty-five percent of all physicians reported that CME was required for reregistration for their licenses to practice, and Table X includes a breakdown of that requirement as it affects physicians in various kinds of professional activities.

Table X

CME REQUIRED FOR LICENSE REREGISTRATION

| | |
|---|---|
| Of All Physicians | 58% |
| Office-Based Physicians | 59 |
| Hospital-Based Physicians | 54 |
| Teaching Physicians | 62 |
| Physicians in Administration | 63 |
| Physicians in Research | 53 |

CME required for state medical society membership for 30% of all physicians

CME required for specialty society membership for 27% of all physicians

Table XI breaks down the requirements for (1) reregistration, (2) medical society membership, and (3) specialty society membership by census regions. The Pacific States and the East North Central States had the highest percentages of requirements for licensure reregistration, whereas physicians living in the East South Central States are least likely to have such requirements. In terms of a requirement for state medical society membership, the mid-Atlantic and New England States lead the list, whereas the physicians living in the East North Central and the West South Central States are least likely to have such requirements.

In terms of a requirement for state medical society membership, the mid-Atlantic and New England States lead the list, whereas the physicians living in the East North Central and the West South Central States are least likely to have such a requirement. The New England States and the West North Central States

Table XI

MANDATORY CONTINUING MEDICAL EDUCATION REQUIRED FOR THE FOLLOWING:

| | | | *CENSUS REGIONS* | | | |
|---|---|---|---|---|---|---|
| | *Total* | *New England* | *Mid Atlantic* | *East North Central* | *West North Central* | *South Atlantic* |
| Reregistration of License - YES | 58% | 72% | 36% | 87% | 63% | 40% |
| State Medical Society Membership - YES | 30 | 43 | 57 | 11 | 20 | 42 |
| Specialty Society Membership - YES | 27 | 31 | 30 | 24 | 32 | 29 |
| BASE | (3551) | (276) | (614) | (575) | (243) | (562) |

| | *Total* | *East South Central* | *West South Central* | *Mountain* | *Pacific* |
|---|---|---|---|---|---|
| Reregistration of License - YES | 58% | 19% | 14% | 75% | 84% |
| State Medical Society Membership - YES | 30 | 17 | 10 | 27 | 23 |
| Specialty Society Membership - YES | 27 | 28 | 25 | 24 | 25 |
| BASE | (3551) | (162) | (279) | (162) | (679) |

Table XII

DO YOU BELIEVE THAT CME SHOULD BE MANDATORY UNDER AND CIRCUMSTANCES

| | | *AGE* | | | | | *AMA Member* | |
|---|---|---|---|---|---|---|---|---|
| | *Total* | *Less Than 35* | *36-45* | *46-55* | *56-65* | *+65* | *YES* | *NO* |
| YES | 52% | 66% | 53% | 46% | 51% | 46% | 49% | 55% |
| NO | 45 | 32 | 45 | 52 | 46 | 46 | 48 | 42 |
| REFUSED/NA | 3 | 2 | 2 | 2 | 3 | 8 | 3 | 3 |
| BASE | (3551) | (477) | (1097) | (982) | (713) | (283) | (1918) | (1633) |

have more requirements for specialty society membership than do the others; the Mountain States and the East North Central States are least likely to have specialty society membership requirements for CME.

When asked do you believe that CME should be mandatory under any circumstances, 52% of the physicians replied in the affirmative, whereas 45% replied in the negative as can be seen in Table XII.

When AMA members' responses were segregated, 49% said yes, 48% no; different percentages were obtained when the responses from non-AMA members were segregated and analyzed: 55% said yes, 42% said no. From the data one can find a direct correlation between the age of the physician and his attitude toward mandatory continuing medical education. Sixty-six percent of those physicians under the age of 35 are in favor of such a requirement, whereas only 46% of those between the ages of 46 and 55 and over 65 are in favor. The highest percentage of negative reactions came from physicians in the age group of 46 to 55. An analysis of those physicians who favor requiring CME is displayed in Table XIII.

Table XIII

PHYSICIANS' ATTITUDES TOWARD REQUIRING CME

| *All Physicians* | *AMA Members* |
|---|---|
| YES 52% | 49% |
| NO 45 | 48 |
| NA 3 | 3 |
| Of the 52% saying yes. | |
| Highest percentages were: | |
| Anesthesiologists | 60% |
| Physicians in Institutional Practice | 60 |
| Physicians who Teach | 70 |
| Physicians in Administration | 61 |
| Physicians in Research | 61 |
| From Pacific States | 59 |
| Lowest percentages were: | |
| General Surgeons | 45% |
| Other Surgical Specialties | 42 |
| Physicians in Solo Practice | 43 |
| From West South Central States | 42 |

AMA members are slightly less (49%) in favor of a requirement than are physicians over all (52%). Those most in favor were physicians who teach, who are in administration, in research, in institutional practice or who are anesthesiologists. Presumably, this is because they spend their professional lives in the academic environment where CME opportunities are continuously available. Physicians in solo practice, in surgical specialties, and from the West South Central States were least enthusiastic about a requirement for continuing medical education. Of the 52% who favor mandatory CME, the vast majority (73%) favored for purposes of reregistration of the license, and 72% favored for hospital staff privileges. These data and the percentages favoring other requirements are found in Table XIV.

Table XIV

OF THE 52% WHO FAVOR MANDATORY CME

73% said for reregistration
45% said for state medical society membership
65% said for specialty society membership
72% said for hospital staff privileges

## Demand for Continuing Medical Education Among Physicians

Most physicians (66%) are able to participate in as many continuing medical education activities as they desire and/or feel necessary for their needs. This is especially true of physicians practicing in the larger metropolitan counties (68%) as opposed to those in rural counties (55%). Across all specialty types the majority of physicians maintain they are able to participate in as many CME activities as they desire. However, physicians specializing in anesthesiology, general surgery and other medical and surgical specialties are able to participate in CME activities more frequently than their colleagues in other specialties.

Those physicians who are unable to participate in as many CME activities as they desire (32%) cite most frequently the following reasons for not being able to do so: "lack of time," "the cost involved/tuition expenses and practice loss," and "difficulty in obtaining coverage for practice."

In the 1955 Vollan Study the three most important reasons given for not attending "postgraduate medical education" courses were, in order of importance. "difficult to obtain practice coverage," "courses given at an unsuitable time," and "the cost involved," whereas in the current study the most important reason given for nonparticipation was "lack of time," followed in order by the "costs involved" and "difficulty in obtaining coverage for practice." Other data show that ample opportunities generally exist within the geographical areas and also in subjects relevant to the physician's practice or specialty.

The Vollan Study revealed that the preponderance of physicians (63%) consider that adding new advances in medicine to his own armamentarium is the most important reason for attending CME courses, followed by the desire to review basic medical principles and knowledge (19%), and lastly by expanding knowledge of one particular aspect of his own field of medicine (15%).

When asked their opinions regarding the number of hours of CME which should be recommended per week for physicians, 77% of all physicians feel that five hours or less per week is "optimum for someone in their specialty or type of practice." The average number of hours per week recommended by physicians overall is 3.97. The recommended average is interesting in view of the way physicians actually spend their CME time per week as shown in Table XV. Physicians' participation in various kinds of CME throughout the week add to an average total of 13.35 hours—approximately four times the amount actually recommended. In addition, it should be noted that physicians generally attend formal CME courses an average of 12.73 days per year.

Table XV

NUMBER OF HOURS OF CME PER WEEK RECOMMENDED BY PHYSICIANS

| | |
|---|---|
| Average hours/week recommended by all physicians | 3.97 |
| Five hours or less per week is "optimum in their specialty or type of practice" | 77% |
| Physicians' average time per week spent on CME | |
| 5.58 - Medical Reading | |
| 4.09 - Consultation | |
| 2.16 - Hospital Meetings | |
| 0.78 - Audio-Visual Programs | |
| 0.74 - Medical Audits | |
| 13.35 - Total Average | |

*Additionally,* physicians attend formal CME courses an average of 12.73 days/year.

### Computer Terminals

Because the computer terminal has become common in most hospitals and in many physicians' offices, particularly those in group practice settings, and because it has become an increasingly important tool in the instruction of medical students, questions were asked regarding the desirability of involving computer terminals in various aspects of the physician's professional activities. In reply to the question, "Should a physician have access to a computer terminal at the time and place he or she formulates diagnostic and therapeutic plans?" 37% of all physicians said yes, and 58% said no, 5% did not answer. The percentage desiring such access was highest in the less than 35 age group, next highest in the 36-45 age bracket, and progressively lower as the age of the physicians increased. The complete data are displayed in Table XVI.

Table XVII shows the kinds of information desired by the physicians in various age groups who said they would like to have such information available on computer terminals. The percentages desiring drug dose and differential diagnostic information range from 94% in the younger age group to 89% in the oldest physicians. The desire for medical information inquiry and self-instructional programs varies from 91% to 77% across all age groups. The desire for diagnostic and treatment algorithms varied from 88% to 77% across all age groups. When asked if they would like to have confidential, computerized, self-assessment pro-

Table XVI

SHOULD A PHYSICIAN HAVE ACCESS TO A COMPUTER TERMINAL AT THE TIME AND PLACE HE/SHE FORMULATES DIAGNOSTIC AND THERAPEUTIC PLANS

| | | *AGE GROUP* | | | | |
|---|---|---|---|---|---|---|
| | *Total* | *Less Than 35* | *36-45* | *46-55* | *56-65* | *+65* |
| YES | 37% | 43% | 41% | 36% | 30% | 28% |
| NO | 58 | 54 | 55 | 59 | 62 | 58 |
| NO ANSWER | 5 | 3 | 4 | 5 | 8 | 14 |
| BASE | (3551) | (477) | (1097) | (982) | (713) | (283) |

Table XVII

(IF YES) SHOULD EACH OF THE FOLLOWING TYPES OF INFORMATION BE AVAILABLE TO A PHYSICIAN? (% YES)

| | | *AGE GROUP* | | | | |
|---|---|---|---|---|---|---|
| | *Total* | *Less Than 35* | *36-45* | *46-55* | *56-65* | *+65* |
| Drug Dosage and Other Information | 91% | 94% | 91% | 91% | 90% | 89% |
| Differential Diagnosis Information | 91 | 93 | 92 | 91 | 89 | 89 |
| Medical Information Inquiry and/or Instructional Programs | 85 | 91 | 87 | 85 | 78 | 79 |
| Algorithms for Diagnosis and/or Treatment | 84 | 88 | 84 | 86 | 80 | 77 |
| Bibliographical | | | | | | |
| Bibliographical Information | 82 | 90 | 84 | 83 | 73 | 67 |
| Other | 8 | 11 | 8 | 10 | 6 | 6 |
| BASE | (1302) | (204) | (450) | (353) | (216) | (78) |

cedures available to them, 66% of physicians said that they would. Again the distribution of percentages ranged from 78 in the younger physicians to 43% in favor by physicians over 65.

More than one-third (37%) of physicians would like to have access to a computer terminal at the time he/she formulates diagnostic and therapeutics plans (Table XVI). However, acceptance was highest by younger physicians and decreased with the age of the physician. Forty-three percent of the doctors under 35 years of age would like to have access to such a system, while 28% of those over 65 years of age would accept this type of access. The complete data for various age groups are displayed in Table XVI.

Those physicians who favor computer terminal access when formulating diagnostic and therapeutic plans, would like to have all types of information, as indicated in the questionnaire, available to them. Two types of information are particularly desirable—"drug dosage and other information" and "differential diagnostic information" (both 91%). Table XVII contains a full display of physicians' responses to this portion of the questionnaire.

The data in Table XVIII show that more physicians (66%) are willing to use a computer to compare their level of knowledge to that of other physicians through confidential, self-assessment procedures. Acceptance of this kind of computer application is also related to the age of the physician. Seventy-eight percent of physicians under 35 desire access to this type of system, whereas 43% of physicians over the age of 65 would like to have access to this type of computer usage.

Table XIX sets forth the relative importance of the needs for various kinds of information desired by physicians in CME programs. The data show that physicians would greatly welcome a CME program that would "add new knowledge, methods and techniques

Table XVIII

IT IS NOW POSSIBLE THROUGH THE USE OF COMPUTERS TO MAKE AVAILABLE CONFIDENTIAL SELF-ASSESSMENT PROCEDURES WHICH WILL PERMIT YOU TO ASSESS YOUR LEVEL OF KNOWLEDGE AND COMPARE IT WITH OTHER PHYSICIANS IN YOUR FIELD. WOULD YOU LIKE TO HAVE ACCESS TO THIS?

| | | *AGE GROUP* | | | | |
|---|---|---|---|---|---|---|
| | *Total* | *Less Than 35* | *36-45* | *46-55* | *56-65* | *+65* |
| %YES | 66 | 78 | 72 | 64 | 58 | 43 |
| BASE | (3551) | (477) | (1097) | (982) | (713) | (283) |

of prevention, diagnostics and therapy to his/her armamentarium." A "very high" need for this type of program was indicated by 59% of physicians, whereas only 27% indicated a "high need." The level of need for "refresher" programs in aspects of medicine with which a physician deals most often is also quite high—55% recorded this need as "very high" and an additional 21% indicated a "high" need level. Least in demand in comparison with other types of needs was the necessity to refresh knowledge on "those aspects of medicine infrequently seen." Twenty-nine percent listed this category as "very high" and 39% listed it as "high."

Table XIX

WHAT LEVEL OF NEED DO YOU FEEL REGARDING THE FOLLOWING TYPE OF CONTINUING EDUCATION PROGRAMS

| *Need Level* | *Total* |
|---|---|
| *Adding new knowledge, methods and techniques of prevention, diagnosis and therapy to your armamentarium* | |
| Very high | 59% |
| High | 27 |
| Moderate | 9 |
| Low | 1 |
| Very low | 1 |
| No answer | 3 |
| Average | 4.48 |
| *Refreshing your knowledge of aspects of medicine you deal with most often in your practice* | |
| Very high | 55 |
| High | 21 |
| Moderate | 14 |
| Low | 5 |
| Very low | 2 |
| No answer | 3 |
| Average | 4.27 |
| *Refreshing your knowledge on those aspects of medicine seen infrequently but for which you must be prepared* | |
| Very high | 29 |
| High | 39 |
| Moderate | 27 |
| Low | 4 |
| Very low | 1 |
| No answer | - |
| Average | 3.85 |
| BASE | (3551) |

NOTE: Averages based on a 5-point scale
5 = very high
4 = high
3 = moderate
2 = low
1 = very low

## Self-Study/Self-Assessment Courses

Physicians indicated a moderate level of need for self-assessment and self-study courses for individual home use. Half the physicians indicated a need for such courses in the area of their own specialties. Forty-five percent indicated the need for such courses for "a primary care physician covering multiple areas" and 27% noted that such courses would be needed for a specialist in areas other than his own specialty.

## Summary and Conclusions

Some of the most significant findings in the analysis of the responses of a random sample of 3,551 physicians, selected to be characteristic of the total physician population, are presented below:

The CME-related activities in which physicians participate most frequently are the reading of journals and books, consultations or discussions, and in-hospital meetings and programs.

Seventy-seven percent of all physicians estimate that five hours or less per week spent in CME activities is optimum for their type of practice; however, the average number of hours recommended by physicians over-all is nearly four hours per week. This is in striking contrast to the average of 13.35 hours per week which physicians actually do spend in various CME activities. Much of CME activity takes place in what would otherwise be leisure time and weekends.

In 1979, physicians spent an average of 12.73 days attending formal CME courses.

Forty-four percent of physicians considered the cost of CME to be excessively high.

The greatest cost reported by physicians for participation in formal CME programs is in the loss of physicians' income from practice because of CME attendance. The average loss reported by physicians in this category for 1979 is $1,880.83.

In 1979 the average total cost of CME for all physicians (including loss of practice income) was $4,206.79. Nineteen percent of all physicians in 1979 had total costs for CME of over $5,000.

AMA members tend to spend more on CME than non members.

In 1980, as in 1955, 84% of physicians feel that physicians themselves should be the source of funding for continuing medical education.

Over half of physicians (59%) feel that it is "very important" that CME be offered by accredited institutions. Forty-nine percent of physicians feel that formal accreditation of institutions has improved CME.

Younger physicians are more supportive of technical innovations in instructional modes (i.e. CME via cable TV, and for self-assessment, self-instructional, computerized programs). Over a third of physicians (37%) would like to have access to computer terminals when formulating diagnostic and therapeutic plans.

Meetings or courses sponsored by medical schools rank highest as preferred modes of CME, followed by meetings sponsored by medical societies, and then by scientific meetings sponsored by specialty societies.

A majority of physicians (52%) support requiring CME under any circumstances. Currently CME is required for reregistration for 58% of the physicians, for state medical society membership for 30% of physicians and for specialty membership for 27% of physicians. Requirements vary considerably according to specialty, population density, and geographic census region.

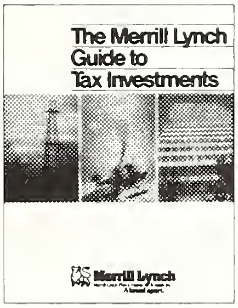
Physicians report CME to be the qualification most preferred for reregistration of the license (55%); among those who feel CME should be mandatory under any circumstances, 73% feel it should be required for reregistration.

Two-thirds of physicians (66%) are able to participate in as many CME opportunities as they desire. Among those unable to participate, "lack of opportunity" is *not* a very important reason for non-participation.

In general, physicians perceive the need for CME programs which "refresh knowledge of aspects of medicine most often dealt with in practice" to be almost as great as the need for programs which "add new knowledge, methods and techniques for prevention, diagnosis and therapy."

If you're in the 49% or higher tax bracket, you know how much of your hard-earned money you send to the I.R.S. on April 15.

But precisely because you are in a high tax bracket, you have the opportunity of deferring a good part of your tax dollars—and, possibly, making a profit, too! It's possible because of tax investments (sometimes called "tax shelters"), which can be suitable for investors with substantial incomes and assets.



Now Merrill Lynch offers a clearly written booklet that presents a basic survey of the entire field and tells you

- What tax investments are
- How they work
- Why tax investments must make economic sense as well as offer tax benefits
- How to choose a tax investment that's right for your personal financial goals
- The major points you and your advisers should be sure to discuss before you make a tax investment

Included are worksheets to help you calculate the tax advantages you would have gained by making tax investments last year. And whether you have sufficient assets to justify considering a tax investment.

For your free booklet, call your local Merrill Lynch office. Or mail the coupon today.

**Merrill Lynch**
Merrill Lynch Pierce Fenner & Smith Inc
A breed apart

# THE SPECIAL TAX PROBLEMS OF THE SUBSTANTIAL EARNER.

ANNOUNCING A MERRILL LYNCH BOOKLET ON TAX INVESTMENTS.

Mail to: Merrill Lynch, 799 Main Street, 17th floor, Dept. C, Hartford, CT 06103
Or call: (203) 728-3946 Please send me your booklet explaining tax investments, without cost or obligation.

Name____________________

Address____________________

City____________ State______ Zip______

Business Phone____________ Home Phone____________

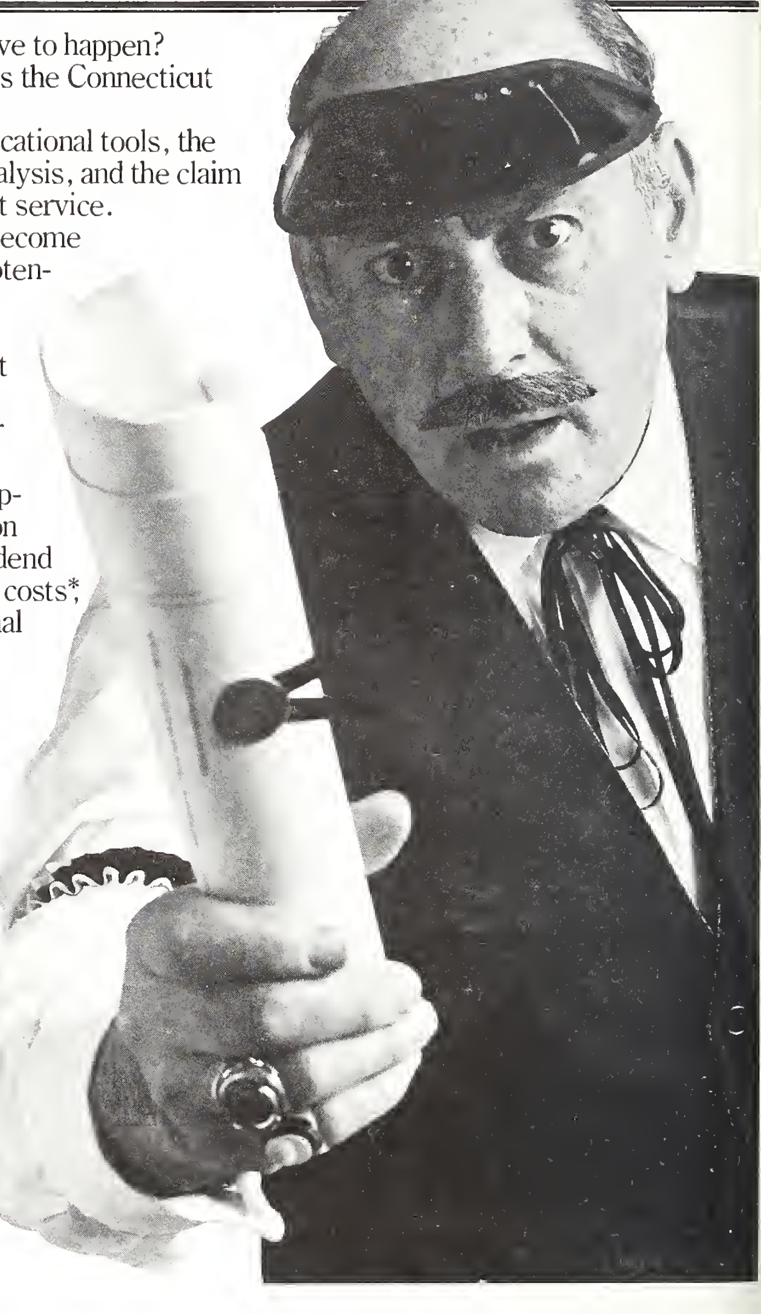
Merrill Lynch customers, please give name and office address of Account Executive

____________________

____________________

© Copyright 1981 Merrill Lynch, Pierce, Fenner & Smith, Inc. Member SIPC

# "You've got a suit, doctor, and it's not hearts or clubs."



Do lawsuits such as the one dramatized have to happen?

No, says Ætna Life & Casualty. No, says the Connecticut State Medical Society.

Not when you take advantage of the educational tools, the claim review panels, claim tracking and analysis, and the claim control that make up our Risk Management service.

This service was designed to help you become more aware of and stay current with the potential occupational and legal hazards of your profession.

Highly acclaimed, the Risk Management service is a vitally important feature of our total Professional Liability Program for Physicians & Surgeons.

Other features include: liability plus property coverages, no Partnership/Corporation or Employed Physician surcharges, a Dividend Program which may reduce your insurance costs*, 24-hour claim service in your state, personal service from your local Ætna agent, and monthly or quarterly payments.

If you're not currently insured through Ætna's Professional Liability Program, sponsored by your society, it's easy to find out more about it. Contact your society or write Frank Ginty, Ætna Life & Casualty, P.O. Box 1980, Trumbull, CT 06601. Or look up your nearest Ætna agent in the Yellow Pages.

Ætna
LIFE & CASUALTY

*Dividends cannot be guaranteed prior to being declared by Ætna's Board of Directors.

The Standard Fire Insurance Company

# Current Medicolegal Issues

## THE CITATION

### Jury Exonerates Medical Groups In Chiropractice Antitrust Case

A federal court jury in Illinois has entered a unanimous verdict in favor of several medical organizations and individuals accused by chiropractors of conspiring to restrain their trade.

The plaintiffs, five individual chiropractors, filed the case in October 1976, against the American Medical Association, the American Osteopathic Association, the American Hospital Association, the Joint Commission on Accreditation of Hospitals, five medical specialty societies, state and local medical societies and several individual defendants.

The five chiropractors claimed that these defendants had conspired to monopolize health care services and to unreasonably restrain duly licensed chiropractors from competing with physicians in providing health care services. They also charged the defendants with conspiring to isolate and eliminate chiropractic as an "unscientific cult" and the practice of chiropractic as a hazard to the health of the public. They claimed loss of income due to denial of access to hospitals and referrals from physicians.

In its defense, the defendants asserted that they had acted in the public interest in protecting the public from unsafe or ineffective health care.

The jury, after an eight-week trial, found that none of the defendants had conspired to restrain the trade of chiropractors within the meaning of the Sherman Antitrust Act. The jury also found that the defendants had not conspired to monopolize nor attempted to monopolize any of the "markets" for health services which the plaintiffs alleged to exist.

The jury voted unanimously for acquittal.—*Wilk v. American Medical Association,* Docket No. CA-76-3777 (D.C., Ill., Jan. 30, 1981)

### Suit For Vasectomy Not Barred By Time

A patient's malpractice suit against two physicians for negligence in performing a vasectomy and correction of a hydrocele was not barred by the statute of limitations, the Louisiana Supreme Court ruled.

The patient underwent surgery in April 1975 for a bilateral vasectomy, a right hydrocelectomy, and a left inguinal hernioplasty. After leaving the hospital, the patient complained of pain and swelling of his right testicle. The operating physician examined him and considered the swelling an expected result of the operation. A week later the patient was admitted to a hospital by the physician's partner.

Treatment of the infected testicle with warm compresses, and antibiotics was unsuccessful, and the partner removed the testicle surgically. After this surgery, the patient saw the physician seven times and resumed sexual relations with his wife. His sex life was normal for a period of time, but his sex drive gradually declined. He returned to the physician in April 1976, at which time laboratory studies were performed. On June 22, 1976, he returned, complaining of impotence. By this time his left testicle had almost completely atrophied.

On August 11, 1976, the physician recommended that he see a reproductive biologist. The specialist examined him and concluded that the remaining testicle was heavily scarred and that a primary disease must have been present in the testicles making them unable to produce male hormones.

The patient filed suit against the physician who operated on him in 1975 and his partner. A trial court dismissed the action and an appellate court affirmed.

On further appeal, the Louisiana Supreme Court said that the action was not barred by the limitations period. The patient was not aware of his cause of action until he became impotent and learned that he had virtually lost his remaining testicle.

The patient was not negligent in failing to connect the gradual shrinkage of his left testicle and decline of sex drive with the vasectomy and hydrocelectomy performed ten months earlier, the court said. He was not charged with knowledge that the physicians were negligent until he became impotent and learned of his condition. The statute of limitations did not start to run until that time, and the action was not barred, the court said.—*Cordova v. Hartford Accident & Indemnity Company,* 387 So.2d 574 (La.Sup.Ct., June 23, 1980; rehearing denied, Sept. 12, 1980)

---

*THE CITATION is a newsletter on medicolegal issues prepared by the Office of The General Counsel of the American Medical Association.*

*Editor's Note:* A prior decision in this case was reported in THE CITATION, Vol. 41, No. 4, p. 41.

## Vasectomy Suit Not Barred By Statute of Limitations

A medical malpractice suit for alleged negligence in performing a vasectomy was not barred by the statute of limitations, a Florida appellate court ruled.

The patient underwent a vasectomy on August 29, 1974. After the procedure, he experienced pain, discomfort, swelling, and hematomas in the scrotal sac. In February or March 1975, his wife became pregnant. On July 12, 1976, the patient and his wife filed a medical mediation claim. However, no hearing was ever held or written decision issued.

On July 8, 1977, the patient filed suit against the operating physician for alleged negligence and against the pathology laboratory for alleged negligent failure to report that the purported vasectomy had not been performed. His wife filed suit against the physician for damages arising out of her pregnancy and abortion necessitated by an Rh factor incompatibility.

A trial court dismissed the action on the ground that it was barred by the two-year statute of limitations. The appellate court reversed the decision. The medical mediation panel had jurisdiction over the claim for ten months from the time the claim was filed. During that time the limitations period was suspended.

There was no conclusive evidence that the patient or his wife could or should have discovered their cause of action more than two years and ten months before the suit was filed, the court said. Dismissal of the complaint was reversed.—*Wimpey v. Sanchez,* 386 So.2d 1241 (Fla.Dist.Ct. of App., July 22, 1980; rehearing denied, Sept. 4, 1980)

## PKU Diagnosis Suit Not Barred By Time

A new statute of limitations could not be applied to a medical malpractice action for failure to diagnose and treat a newborn's phenylketonuria (PKU), the North Carolina Supreme Court ruled.

The patient was born on March 11, 1972. The attending physician last saw him on July 8, 1972. The mother became aware on or about October 14, 1975, that something was wrong with her child and took him to a clinic for evaluation. The clinic determined that he was only one-half as mentally alert as children of his age were supposed to be. On November 22, 1976, his condition was definitively diagnosed as PKU. The mother filed a malpractice suit against the attending physician on December 19, 1977. A trial court granted summary judgment for the physician, and an appellate court affirmed.

Reversing the lower courts' decision, the Supreme Court said that applying the new statute of limitations to the action did not afford a reasonable period of time for the action to be filed. Under the statute in effect on November 22, 1976, the patient had three years in which to file suit from that date, the date the cause of action was discovered.

The statute applied by the lower courts became effective January 1, 1977. The new statute changed the time of accrual of medical malpractice actions from the date of discovery of the injury to the date of last treatment. No actions, except for those involving foreign objects left in the body, could be filed more than four years from the date of last treatment.

The Supreme Court noted that the patient had only 39 days from the diagnosis of PKU until January 1, 1977, to file suit under the old statute. As of January 1, 1977, the action was barred by the new statute. The court said that 39 days was not a reasonable amount of time and thus violated the patient's due process rights. The court also said that the mother, who was divorced and had custody of the child, had standing to bring a claim for medical expenses and loss of services resulting from the injury to the child.—*Flippin v. Jarrell,* 270 S.E.2d 482 (N.C. Sup. Ct., Oct. 7, 1980)

*Editor's Note:* A prior decision in this case was reported in THE CITATION, Vol. 41, No. 3, p. 27.

## Parents' Suit For Child Barred By Time Limits

A malpractice suit against a physician and a hospital was barred by the statute of limitations, a Pennsylvania appellate court ruled.

A patient was born on December 12, 1975, suffering from cerebral trauma, injuries to his central nervous and peripheral nervous system, cerebral palsy, injuries to his brain and cortical tissues, and spasticity in his muscles, tissues and joints. His parents filed suit against the physician and hospital on November 16, 1977, on behalf of themselves. On August 29, 1978, they included a claim on behalf of their child. Neither the inclusion of the child's name in the captions of the case nor the inclusion of his claim in the complaint had court approval or the consent of the attorneys for the physician and hospital. A trial court dismissed the child's complaint as barred by the statute of limitations.

Affirming the decision, the appellate court said that the child's claim was barred. The parents were aware of their son's injuries from the time of birth, which was when the limitations period began. The discovery rule did not apply, the court said. The action on behalf of the child was filed more than two years after the child was born and was barred by the statute of limitations, the court ruled.—*Stein v. Richardson,* 419 A.2d 1374 (Pa.Super.Ct., May 2, 1980)

*—THE CITATION, Vol. 42, No. 9/February 15, 1981*

# Month in Washington

Due mostly to the Reagan Administration's canny use of the five-year-old Congressional budget process, the important money decisions for all federal agencies were wrapped into one package last August—the Omnibus Budget Reconciliation Act. As a consequence, there is not much going on healthwise in Capitol Hill Chambers. "Quieter than it has been in more than 20 years when then Health, Education and Welfare Secretary Arthur Flemming used to hold an intimate weekly news conference and be happy when more than a couple of reporters showed up," writes one veteran health observor.

*****

The Administration is forging ahead with its plan to slash 12 percent from domestic federal programs despite mounting Congressional resistance.

A complicated budget battle is engulfing the Capitol with the latest wrinkle—a decision by President Reagan to defer some $1 billion in spending while Congress deliberates the issue of a new round of cuts.

At present all federal agencies are operating under a stop-gap continuing resolution to keep them funded. Only 12 major appropriations bills to provide money for the current fiscal year that started Oct. 1 has been adopted by Congress. The House has passed 10 bills; the Senate, two.

Most of the appropriations bills reflect the $30 billion of savings called for in the massive budget reconciliation measure approved by Congress last August.

But so far there's been no action by Congress on the President's recent proposal to pare another $13 billion from federal spending during the current fiscal year. This would involve an extra $1 billion taken from federal health program expenditures.

An indication of the difficulties facing the Administration came in the House vote on the Health and Human Services (HHS) Department appropriations bill when a move to send the bill back to committee to make further cuts as requested by the President was defeated 249 to 168.

The President's plan to defer spending by $1 billion from the initial period would temporarily reduce spending for 500 to 800 domestic programs below the stop-gap rate set by Congress. Authority for such deferrals come from the 1974 Budget Act. House Speaker Thomas O'Neill charged the tactic is "a backdoor method to frustrate the law."

The next months promise to pose stern confrontations between Congress and the Administration on the spending issue which will dominate the domestic scene through the rest of the session. Presidential vetoes of over-the-mark appropriations bills already have been threatened.

*****

The specific goals of consumer choice national health proposals of achieving greater cost-consciousness and individual responsibility in selection of insurance coverage and seeking health care "are meritorious and should be pursued," the AMA has told Congress.

The House Ways and Means Subcommittee on Health was told that "when considering legislation to implement the 'competition' theory, however, it is important to point out that proposals should not be allowed to restrain the appropriate use of needed medical services."

Fred Rainey, M.D., Chairman of the AMA Council on Legislation, testified that "it is important to state at the outset that all increases in medical care costs over the past two decades do not represent a 'problem' but in fact reflect solutions to long-term public health problems such as high infant mortality and poor access to care."

The Kentucky physician noted that the AMA has been greatly concerned about cost increases and has been actively engaged in activities designed to bring these increases under control.

A consumer choice bill should not be used to create incentives to under-insure, Dr. Rainey said. "Furthermore, no legislative initiative should be considered that would have the effect of rationing or lowering the quality of care in this country."

Dr. Rainey was one of scores of witnesses who appeared at three days of hearings by the Subcommittee on the issue that has achieved impetus from the Reagan Administration's enthusiastic backing of the idea.

The Reagan Administration is still at work preparing its pro-competition, or consumer-choice plan, but is wedded to the concept, said Robert Rubin, M.D., Assistant Secretary for Planning and Evaluation at HHS.

Dr. Rubin said the plan won't be ready for a few months and that the Administration anticipates Congressional action next year. "Consumer choice and market forces, rather than regulation, should be relied on to control health cost inflation," he told the Subcommittee.

Dr. Rubin, who is heading the Administration's "intensive study and analysis" of pro-competition, said

---

*Prepared by the Washington, D.C.*
*Office of the American Medical Association*

"the current system is inherently inflationary and based on the wrong fundamental incentives for virtually every party—patients, hospitals, doctors, insurers, employers and government regulators. One alternative is more regulation—arbitrary caps on every health budget item, more paperwork, less innovation and less patients' satisfaction. That course ultimately leads to utility regulation with government rationing and rate setting."

The success of a competitive strategy "rests on our ability to influence behavior—through marketplace incentives and penalties rather than government regulation," he said. "It is an idea whose time has come."

Organized labor has dug in its heels against "pro-competition" legislation. At the opening session, labor renewed its old hate affair. Bert Seidman, Director of the AFL-CIO Department of Social Security, said "we cannot accept the unfounded premise that competition in the health care industry can contain health care costs." Enactment of pro-competition "would impose a highly unrealistic, fanciful and harmful scheme on the American people," he said.

Said Seidman: "deductibles, co-payments and inadequate coverage have been resisted by unions for many years because comprehensive benefits are what the membership wants . . . Unions are determined to preserve the gains won over many years through collective bargaining and will strongly resist any attempts to take away these gains by legislation. Our members want more insurance, not less."

Alexander McMahon, President of the American Hospital Association (AHA), said his organization believes that consumer choice approaches "represent a promising alternative to traditional regulatory approaches."

Changes in the current financing and payment system could create new and different risks for hospitals and other providers of health care services, McMahon said. "Nevertheless, we feel that many of these concerns are fears of the unknown. Therefore, the AHA has taken an active role in stimulating discussion and examination of consumer choice concepts."

Michael Bromberg, Executive Director of the Federation of American Hospitals (FAH), testified that "restoring cost consciousness to providers and consumers is intrinsic to any solution to rising health costs."

Bromberg said the FAH believes that "a ceiling on tax free premium contributions, a uniform employer contribution, and a Medicare voucher system would best strike the right balance between the patient's interest in getting good health care and society's interest that the value of health care benefits exceeds their associated costs."

Alice Rivlin, Director of the Congressional Budget Office, cast a rather skeptical eye on consumer choice. "The available evidence suggests that employers would be reluctant to offer a choice of plans," she said. "Even under present law, employers that require a contribution from their employes can offer a choice of health plans and reward those selecting plans with lower premiums. Yet these firms seldom take advantage of this opportunity."

Adverse selection might occur with those likely to be low users tending to choose low option plans and those likely to be high users picking the high options, Rivlin said.

Despite the Administration's enthusiastic approach to pro-competition health plans, the reaction voiced by consumer, provider, business, and insurance groups during the three days of hearings was one of caution.

*****

The AMA has joined an assortment of professional and pharmaceutical groups in urging the Food and Drug Administration (FDA) to pull back from plans to mandate patient package inserts (PPIs) for 10 commonly prescribed drugs.

The three-year pilot program was put on hold early this year by FDA Commissioner Arthur Hull Hayes, Jr., M.D. The Commissioner has said that he favored providing information to patients about drugs, but was seeking new information about benefits and costs.

In AMA testimony trustee Alan R. Nelson, M.D., said a PPI must "have a demonstrable effect on patient compliance with a drug regimen in order for it to be deemed clinically or cost effective." If it doesn't, then it provides no benefit to patient or physician, he said.

While questioning the validity of a study of PPIs conducted for FDA by the Rand Corp., Dr. Nelson noted that the study appeared to show that PPIs did not improve patient compliance with prescribed drug therapy, and urged the agency to rescind the mandatory PPI program.

Dr. Nelson said the AMA supports the provision of information about drugs to patients by physicians, and he urged the FDA to consider the possibility of a private sector demonstration program with physicians, rather than pharmacists, as the dispensers of information.

James H. Sammons, M.D., AMA Executive Vice President has been elected to membership in the Institute of Medicine, an arm of the National Academy of Sciences.

Dr. Sammons was one of 50 new members elected by the Institute's present 321 active members to a five-year term. Candidates for membership are selected for their contributions to health and medicine, or to related fields such as law, administration, engineering, and the social and behavioral sciences.

Of the newly elected members, 34 are physicians, including Edward N. Brandt, Jr., M.D., Assistant Secretary for Health.

# COMMITTEE SERVICE QUESTIONNAIRE
## Connecticut State Medical Society

Early in 1982 the Councilors from the eight constituent county medical associations assume the responsibility of selecting members of the Society to participate in the various activities of the Society listed below. In making these selections it is of importance to choose physicians who are not only willing and able to serve but also who are known to have an interest in the work of the group to which they may be assigned. In order to enable this office to furnish the Councilors with a compilation of those who desire to be considered for committee service, all members are asked to indicate by number in order of preference (not more than three) opposite your choice in the questionnaire below and return same to the:

Executive Director's Office
160 St. Ronan Street
New Haven, CT 06511

Your cooperation will be appreciated.

**Medical Education**

☐ Committee on Continuing Medical Education
☐ Committee on Program of the Scientific Assembly

**Medical Economics**

☐ Committee on Insurance
☐ Committee on Professional Liability
☐ Committee on Peer Review Systems
☐ Committee on Third Party Payments

**Professional Relations**

☐ Judicial Committee

**Public Affairs and Communications**

☐ Editorial Committee of "Connecticut Medicine"
☐ Committee on Legislation
☐ Committee on Public Relations

**Scientific and Socio-Environmental Medicine**

☐ Committee on Emergency Medical Services
☐ Cancer Coordinating Committee
☐ Committee on Drug Abuse Educational Programs
☐ Committee on Maternal Morbidity and Mortality
☐ Committee on Medical Aspects of Sports
☐ Committee on Mental Health
☐ Committee on Organ and Tissue Transfers
☐ Committee to Study Perinatal Morbidity and Mortality
☐ Committee on Public Health
☐ Committee on Continuing Medical Care and Rehabilitation
☐ Committee on Statewide Medical Planning

**Representatives and Advisors**

☐ Committee on Allied Medical Services
☐ Committee on Hospitals
☐ Committee on Cooperation with the Medical Schools of Connecticut
☐ Liaison Committee with Connecticut Pharmaceutical Association
☐ Liaison Committee with State Department of Income Maintenance
☐ Representatives to Connecticut Advisory School Health Council
☐ Delegates to Connecticut Health Association, Inc.
☐ Delegates to Connecticut Nutrition Council
☐ Representatives to Connecticut Advisory Committee on Foods and Drugs
☐ Delegates to Council of New England State Medical Societies

**Please Return by January 10, 1982**

Signed: ______________________________ M.D.

Office Address: ______________________________

______________________________

## CONNECTICUT PHYSICIANS—
## now there's a professional liability insurance program that assures active participation by your state and county medical associations

# THE OFFICIALLY-ENDORSED PHYSICIANS PROTECTION PROGRAM

As a Connecticut physician, you know malpractice is a pressing concern. And because no one knows the medical profession or your needs better than you and your fellow physicians, it's important to find a professional liability insurance program that integrates the knowledge and expertise of your state and county medical associations with the financial strength and know-how of a major insurance organization.

That's why your medical organizations worked together with CNA Insurance and the Arthur A. Watson Agency to develop the Physicians Protection Program. CNA has the strength and experience of over 25 years in the professional liability field. The Arthur A. Watson agency has more than a half century of risk management experience. Plus, the program launches a partnership between CNA, the Connecticut State Medical Society and your county medical associations that assures the active participation of these organizations in vitally important areas of your insurance program.

## MAJOR FEATURES OF THE PHYSICIANS PROTECTION PROGRAM

- **Peer review panels oversee essential program function**—Your program has established peer review panels composed of county association physicians who help with loss control, provide expert review of all claims, and more.
- **No settlement without consent**—This program assures no claims will ever be settled without your prior approval. If CNA and your county peer review committee jointly recommend a settlement agreeable to the claimant, the liability limits for this claim will be the amount for which the claim could have been settled plus the amount of claim expenses up to the date of the recommendation.
- **Three-year stability guarantee**—CNA guarantees Physicians Protection Program stability for all participating members for three years. This guarantee can be extended annually.
- **Individual policy aggregates**—Each physician insured is covered individually up to the full policy aggregate.
- **Premium return mechanism**—This valuable feature can return a portion of your premium when you and your fellow participating county physicians keep losses low.
- **Full financial disclosure**—All financial data on the program will be disclosed to program participants twice each year.
- 50% premium reduction for eligible new first-year physicians.

## LIMITS UP TO $5 MILLION AVAILABLE

**Professional liability**—Your Physicians Protection Program provides protection on an occurrence basis with standard limits up to $100,000 per claim/$300,000 aggregate. Higher limits up to $5 million are available.

Plus, optional coverages are available to provide property and liability protection for your buildings, office contents, and loss of income: personal liability protection; and standard Workers' Compensation and Employer's Liability statutory coverages.

## SEND FOR ALL THE FACTS

Before you renew your current professional liability insurance get all the facts about the new officially-endorsed Physicians Protection Program. Call your county medical association or the program administrator today—it could be the most important call you make.

**ARTHUR A. WATSON**
**& COMPANY, INC.**
Professional Liability Division
225 Spring Street
Wethersfield, Connecticut 06109
(203) 563-8111

INSURANCE FROM
CNA

# Study Reveals Multiple Interpretations of Phrases Commonly Used by Doctors

There's wide divergence between what doctors think they say and what patients think they mean, according to a recent study conducted by seven graduate students at Case Western Reserve University School of Medicine in Cleveland, Ohio.

Results of the study strongly suggest that patients have different interpretations of doctors' remarks and doctors have different intent by their comments. The study was directed by Marcia Z. Wile, Ph.D., assistant professor of medical education research at Case Western Reserve.

For the study, the students first chose 10 non-technical phrases commonly used in doctor-patient conversations:

"Going home from the hospital soon"
"Take this medication as needed"
"If you have a reaction"
"It's serious"
"It's not serious"
"You don't have to worry"
"It'll only hurt a little"
"Just a minute"
"If you have trouble, call me"
"Take care of it now"

Next, a pilot test was conducted. A group of doctors and potential health care recipients (referred to as patients) were asked to state the meaning of each phrase. Their verbatim responses were then used to construct a series of alternative interpretations for the 10 phrases.

Finally, a multiple choice response form was developed for the study. Using this form, 70 northeastern Ohio patients and 58 doctors and third - and fourth - year medical students selected the response that most closely reflected their personal interpretation.

The doctors and medical students were asked to select the response which most accurately represented the meaning they intended to convey when using the various phrases. The patients were asked to indicate the response which best represented their understanding of each phrase.

The study revealed multiple interpretations of the phrases within the patient group, within the doctor/medical student group, and between the two groups, Wile said.

The study confirmed the concept that communication is still a two-way street. "It's hardly a new idea, but as health care professionals, we should be asking ourselves if we're providing a feedback mechanism," Wile said.

"Doctors," Wile added, "may need to allot more time to exploring a patient's comprehension by asking: 'What do you understand this to mean?'" By the same token, she emphasized, "Patients must assume some responsibility in the communication process."

Before reading more about the study, you may want to respond to the phrases yourself.

**Selected findings in the study are:**

■ Almost 90 percent of the doctors interpreted the phrase *"going home from the hospital soon"* to mean either "two to four days" or "an indeterminate time." However, almost 20 percent of the patients considered the phrase to mean "tomorrow." (The dictionary definition of the word soon is "at once, immediately, before long, without undue time lapse, promptly, speedily.")

■ With regard to the phrase *"take this medicine as needed,"* many doctors qualified their responses by stating that medicine would always be prescribed for a specific purpose. However, almost two-thirds of the patients seemed to equate medicine with pain or discomfort.

■ There was general agreement between doctors and patients about the phrase "if you have a reaction." Nearly half of the doctors (45 percent) and half of the patients (47 percent) considered the phrase to mean "if something unexpected occurs."

■ Ninety percent of the doctors and 79 percent of the patients interpreted the phrase *"it's serious"* to mean "it needs immediate attention." Almost all of the other doctors (5 percent) and patients (16 percent) said the phrase means "you'll have to be hospitalized."

■ In the case of the phrase *"it's not serious,"* the majority of doctors (77 percent) and patients (66 percent) took the phrase to mean "the illness is mild." Another 9 percent of the doctors and 12 percent of the patients said the phrase means "it'll go away by itself in a few days."

---

Reprinted with permission from *Malpractice Digest,* May 1981. Published by St. Paul Fire & Marine Insurance Co., St. Paul, Minnesota.

■ Nearly two-thirds of the doctors and patients understood the phrase *"you don't have to worry"* to mean "illness is slight" or "it's treatable." However, 4 percent of the doctors and 14 percent of the patients considered the phrase as "false reassurance."

■ Interpretation of the phrase *"it'll only hurt a little"* ranged from "a quick pinch," to "it'll probably hurt a lot." The latter was the response of 20 percent of the patients, but only 2 percent of the doctors.

■ For the phrase *"just a minute,"* more than one-third of the patients interpreted the phrase somewhat cynically as meaning "30 seconds to 30 minutes." For the most part, however, the doctors took the phrase to mean either a very precise "minute or two" (30 percent) or "an indefinite time" (31 percent). Still, about 20 percent of the doctors and the same percentage of patients understood the phrase to mean "five minutes."

■ There was significant difference in the response to the phrase *"if you have trouble, call me."* Approximately 60 percent of the doctors interpreted this to mean "if the treatment doesn't work and you get sicker." However, only 30 percent of the patients chose the same response. Eight percent of the patients took the phrase to be a brush-off.

■ Finally, 54 percent of the doctors and 64 percent of the patients said *"take care of it now"* means "don't put it off." The next largest percentage of the doctors (23 percent) and patients (20 percent) said the phrase means "do it the same day." ■

## PHRASES USED IN PHYSICIAN-PATIENT COMMUNICATION STUDY CONDUCTED AT CASE WESTERN RESERVE UNIVERSITY

---

1) **Going home from the hospital soon** means
   a. in an hour
   b. tomorrow
   c. after an hour, but today
   d. 2-4 days
   e. indeterminate time
   f. no response

2) **Take this medicine as needed** means
   a. when you have pain
   b. when you feel sick
   c. when you feel uncomfortable
   d. when you want to
   e. as little as possible
   f. no response

3) **If you have a reaction** means
   a. if something unexpected happens
   b. fever
   c. vomiting
   d. itching, breaking out in hives, rash
   e. if something happens you don't understand
   f. no response

4) **It's serious** means
   a. it needs immediate attention
   b. you'll have to be hospitalized
   c. it's cancer
   d. you'll need an operation
   e. it's terminal
   f. no response

5) **It's not serious** means
   a. the illness is mild
   b. it won't kill you
   c. it'll go away by itself in a few days
   d. nothing is wrong with you
   e. no surgery is necessary
   f. no response

6) **You don't have to worry** means
   a. everything is fine
   b. illness is slight
   c. forget about it, learn to live with it
   d. false reassurance
   e. it's treatable
   f. no response

7) **It'll only hurt a little** means
   a. a quick pinch
   b. it'll probably hurt a lot
   c. there won't be much pain
   d. some discomfort
   e. no response

8) **Just a minute** means
   a. a minute or two
   b. five minutes
   c. 15 minutes to two hours
   d. anywhere from 30 seconds to 30 minutes
   e. an indefinite time
   f. no response

9) **If you have trouble, call me** means
   a. it shouldn't need further attention
   b. reassurance by the doctor
   c. a brush-off (doctor doesn't want the patient to call)
   d. if the treatment doesn't work and you get sicker
   e. any reaction—pain or fever
   f. no response

10) **Take care of it now** means
   a. do it the same day
   b. within the next few days to a week
   c. within two weeks or before the month is over
   d. don't put if off
   e. no response

# Reflections from the Dean's Office

## The Best of Times

ROBERT U. MASSEY, M.D.

Last month I suggested that our chief objective should not be to reduce the costs of medical care; that did not imply that efficiency and lower costs should not be desirable goals. This year's increase in the cost of medical care seems to have broken all records, but that can be said of the cost of energy and several other things as well.

A hospital administrator from a midwestern city told me that his internist had recently charged him $100 for a house call which he had made on his way home. The administrator changed doctors. There are rumors that the rate of increase in physicians' fees is diminishing in the Pacific Northwest, where physician-to-population ratios may be three times the value we thought adequate in 1960, and tenfold the number which Flexner recommended in 1910. With those ratios, changing doctors may not be as difficult nor as hazardous as it was 20 years ago.

There are communities in which the numbers of physicians relative to population are high and medical care costs are even higher; we need to be careful not to assume that these higher costs are always caused by the greater concentration of physicians. An affluent community or a town with an employer who provides over-generous health insurance benefits is unlikely to suffer from a shortage of physicians or hospital beds.

Some forecasters say that those of us involved in medical care may price ourselves out of the market during the next decade. That seems unlikely. Essential goods and services remain essential and the market adjusts; that, however, is the point: things will not remain as they are. Changes are certain to occur, and we shall manage those changes well or badly, taking the high road or the low road.

It is certain that there are no simple solutions, and that there will never be a strategy which all will accept. Whatever strategy is settled upon will be selected politically, and no one will ever be quite certain that it is working.

We shall increase or decrease the number of physicians being graduated from our medical schools for political reasons; on this issue perceptions are more important than whether the GMENAC report is right or wrong. We shall limit Medicare payments, reduce health benefits, regulate hospital expenditures, ration technology, build jogging paths, or support research, or do only some or none of those things, depending upon whom our political masters are listening to; four years from now the experts will say it was all a mistake, and we shall head off in different directions.

That is all because some medical care is essential and most is terribly expensive; we may be able to do something about reducing the need, and we should be able to do something about the cost. We do know how to provide adequate and excellent medical care efficiently; we have the information necessary to make decisions about resources and the deployment of physicians in ways which will provide the best care for the most people; we know a lot about the process of science and how to find out things and how to design new technologies. We could, if we would, assure the quality and control the cost of medical care. It would require professional discipline, but we have shown ourselves capable of that in the past. The Joint Commission on Accreditation of Hospitals was not the result of a congressional act; the reform of medical education did not begin with the decision of some agency in Washington.

The old regulators are going, the new ones have not yet come. If it is possible to make a difference by seizing the initiative, there may be no time better than now for decades to come. Government, industry, and the insurance companies are being forced by rising costs and public dissatisfaction into devising all sorts of strategies for lowering those costs. The public's interest will not be well served, however, unless we, physicians, hospitals, and medical schools, will transform what we already know into a strategy which will work, a strategy which takes the high road of science and humanitarianism.

---

ROBERT U. MASSEY, M.D., Professor and Dean, School of Medicine, University of Connecticut Health Center, Farmington.

☐ I'd like to schedule a personal, no-obligation fiscal review. Please call me.

☐ Please send me more information about Colonial's Personal Trust Services.

Name ______________________

Address ______________________

City ____________ State ______ Zip ________

Telephone ______________________

FREE FISCAL FITNESS LESSON FOR ABOVE-AVERAGE EARNERS.

Mary E. Head
Assistant Vice President-Trust
Colonial Bank
135 Church Street
New Haven, CT 06510

"If your income is a little more than average, you work a little harder to protect it. That's where I can help.

"For instance, I can tell you about a Colonial Living Trust. This unique type of trust functions during your lifetime, to manage your investments, shelter you from needless taxation, provide a secure source of family income. It can even attend to routine financial needs if you become ill or incapacitated.

"Most of all, a Living Trust provides financial certainty in these uncertain times. Just like Colonial's other personal trust, estate, and investment services.

"Let me tell you about them all. Use the coupon to schedule an in-depth, personal financial review, at no obligation. Or call me direct at 789-4738.

"And let's talk fiscal fitness."

Colonial Bank
Trust Group

**Connecticut Medicine**

*The Journal of the Connecticut State Medical Society*
*160 St. Ronan Street, New Haven, CT 06511*

Fred Fabro, *Editor*

Sherwin B. Nuland
*Literary Editor*

Vivian C. Feriola,
*Assistant to the Editor*

*Editorial Board*

John P. Callan, *Wethersfield*
Martin Duke, *Manchester*
Stephen Fleck, *New Haven*
Carl F. Hinz, Jr., *Farmington*
James D. Kenney, *New Haven*
Ramon N. Kranwinkel, *Danbury*
Charles M. Krinsky, *New London*
John L. Meyer, *Putnam*
Hans H. Neumann, *New Haven*
Maer B. Ozonoff, *Newington*
Stewart J. Petrie, *Derby*
Melville P. Roberts, *Hartford*
Merrill B. Rubinow, *Manchester*
Howard J. Wetstone, *Hartford*

# EDITORIALS

## Two Years Before the Mast

In its infinite wisdom, the General Assembly of the State of Connecticut recently effected a total alteration of the State Commission on Hospitals and Health Care. Completely eliminated was the mandated representation from the Connecticut State Medical Society. The importance of this apparently drastic action of separating any physician influence from the regulation of health care in our state should not be overestimated (sic). There was in essence no physician influence on the Commission on Hospitals and Health care during my two years as commissioner. An explanation of this statement is warranted.

It was my good fortune to have been appointed to the Commission by Governor Grasso in the Spring of 1979. As the representative of CSMS and of organized medicine I could in no way have been prepared for the cold and basically hostile reception awaiting me, not as an individual, but as a practicing physician who represented the views of the mass of practitioners in this state. The attitude of most Commissioners was that hospitals were workshops for physicians and opinion was frequently expressed that the *only* motive for making available new and sophisticated technics was to increase the fees of the physicians utilizing these advanced methods of care. It is truly fortunate that such commissions did not exist at the turn of the century for the boundless advances of the medical giants of the twentieth century would never have been allowed to come to fruition.

Every time major innovations were discussed there was a plethora of fiscal data, logistical data, actuarial data and personnel data but never a word about that unimportant item - patient care.

A word must be mentioned about the original intent of the Commission when the General Assembly wisely envisioned it to be a force to cooperate with hospitals and seek a way of eliminating (1) unnecessary duplication of facilities, (2) bed capacities ill-advisedly enlarged beyond community need, (3) overutilization of existing facilities such as emergency departments and, in general, to pursue other cooperative measures to reduce costs but above all to maintain Connecticut's traditional high level of patient care.

These exemplary and attainable objectives had long since vanished by the time I arrived at the Commission. The cooperative effort had been replaced by the now well-known struggle between the two behemoths, the bureaucratic Commission and the equally bureaucratic Hospital Association. Each wished to insure its hegemony over the delivery of health care in our state. Each, as befits a bureaucracy, jealously guarded its rights and powers with abundant legal assistance. And for some arcane reason, the Nursing Home industry and Nurses' representative usually followed the dicta of the Commission staff. The sole spokesman for the patients was the representative of organized medicine and with that stigma, there were few listeners to his pleas.

Let us hope that the new Commission will direct some attention to the massive overutilization and overcharges of Emergency Departments. Some way must be found to eliminate the primary-care-physician role of the Ed in those non-emergent situations which represent a very substantial fraction of ED visits. The problem lies in third party coverage of ED visits, mandated by that other bureaucratic arm, the State Insurance Department, without any coverage if the visit is to the private physician at a much lower cost. This problem and other similar cost-effective matters should be approached by a Commission which should include substantial practicing-physician representation. I hope that our Governor and our Legislature will make appropriate changes in the composition and mandate of the Commission on Hospitals and Health Care of our State.

Merrill B. Rubinow, M.D.
*Former Commissioner, CHHC*

*Editorials are expressions of personal opinion and do not necessarily reflect the policies of CSMS.*

## AMA Offers Pointers on How to Pick a Nursing Home

Choosing a nursing home for a relative, a friend or possibly for yourself is an important decision. Services offered by a nursing home are frequently as necessary as hospital services, but information on nursing homes is sometimes not easily available.

A patient and his family generally know what services to expect in a hospital, but lack general knowledge about facilities called nursing homes. These vary tremendously in the services they are prepared to offer.

Furthermore, when a patient enters the hospital, the choice of facility is usually his physician's, but the choice of a nursing home very often depends on the patient or his family, as well as the physician.

Ideally, says the American Medical Association, a nursing home is a facility which provides good nursing care in an environment as physically and psychologically homelike as possible. It may be a proprietary (private owned) facility, under church or other non-profit auspices, or a tax-supported governmental institution. It may be called a rest home, home for the aging, convalescent home or sanitarium.

### Residential Care

General supervision and a protective environment, including room and board, with a planned program for the needs of the residents is essential to any nursing home. Personal services such as help in walking, getting in and out of bed, bathing, dressing and eating and preparation of special diets are important.

Some homes offer nursing procedures requiring professional skills, including administering of medications, injections, catheterizations and similar procedures ordered by the attending physician. Homes vary considerably in the extent to which they provide these services—particularly nursing care. You will want to know not only whether nursing care is provided, but also what level of nursing care.

The long term health care facility is a center for inpatient care other than a hospital. It will have an organized medical staff, medical staff equivalent, or medical director. There will be continuing nursing service under professional nurse direction. Some facilities also offer comprehensive preventive, rehabilitative, social, spiritual and emotional inpatient care to individuals requiring long term health care and to convalescent patients who have a variety of medical conditions with varying needs.

A different center is the resident care facility. It provides safe, hygienic living arrangements for residents. Regular and emergency health services are available when needed. Appropriate supportive services are provided on a regular basis.

The most important aid in deciding whether a nursing home is the best answer to your particular situation, and which particular home is most suitable, is a complete physical examination of the patient by his personal physician. This will include an evaluation of the patient's potential for rehabilitation and full outlines for treatment.

### Individual Needs

The physician's evaluation will allow him to determine whether the patient needs a home providing only residential care or whether he also needs personal services or intensive nursing care.

Your physician can help determine whether there is need for special diet, medications or treatments. He can determine whether your stay is likely to be short or of long duration.

Your doctor can help you make a brief list of nursing homes in your area offering the type of services you need. Other sources of information are your state affiliate of the American Health Care Association or the American Association of Homes for the Aging. Your county medical society, community welfare council, health or welfare department may have information on homes in your area.

What should you ask when visiting a nursing home? First, don't be bashful. The choice of a home is an important decision. Get answers to all of your questions.

Ask to see the home's certificate of licensure, just to make certain it is licensed. Find out if the institution requires a physical examination and physician's orders for treatment prior to or immediately after admitting the patient. A good nursing home will insist on this.

Learn if there are staff physicians who actually spend time in the home with the patients and the nursing staff. And know if the home reports periodically on the patient's condition to his personal physician.

### Level of Care

The nursing home should have a written agreement with a hospital for transfer of any patient whose condition requires it, and for exchange of appropriate medical and administrative information.

Your physician can tell you what level of nursing supervision is advisable for your patient. Find out if the home has this level. Is there provision for dental care of patients within the home? There should be formal arrangements with a dentist to advise on oral hygiene and provide care in dental emergencies.

The nursing home should have facilities available for patient rehabilitation, and they should be used regularly. Basic equipment can include walkers, bed boards, whirlpool baths, parallel rails, exercise steps and the like. Equally as important as equipment is a desire on the part of the staff to help each patient be as independent as he can. Look for the home that tries to keep patients active and helps them care for themselves as much as possible.

Avoid the institution which over-medicates patients to keep them quiet and in bed. Not all nursing home patients can benefit from rehabilitation, of course. But those who can should have ample opportunity.

### Nursing Staff is Crucial

A good nursing staff will understand and use the basic techniques for preventing deformity and contracture of muscles, for restraining the patient in self-care (eating, dressing, bathing, walking, etc.) and for assisting the incontinent patient to regain control.

The facilities should be of fireproof or fire-resistant construction, in good repair and designed with fire escapes and adequate ramps for quick evacuation. A plan for evacuation in case of fire or other disaster should be posted in conspicuous locations throughout the home, and the staff should be familiar with the plan. There should be rails in the hallways, grip bars in bathtubs, showers and next to toilets. Floor coverings should be nonskid.

Food service in a nursing home should be supervised by a qualified person on a full-time basis. Ask to see the menus for the past month and check on the variety of foods available. Note whether the kitchen is clean, has proper and adequate refrigeration, dishwashing and garbage disposal facilities. The food service staff should be clean, neat and properly trained in sanitation. Dietary records on each patient should be maintained and the home should be ready to supply special diets.

Does the general atmosphere have a home-like quality? Are the floors clean, the lawn and landscaping attractively maintained? What arrangements are there for housekeeping service? Is there enough space for each patient? (This is particularly important in homes with ward or dormitory-type accomodations).

### Good Housekeeping Vital

Check for such basics as fresh sheets on the bed, clean uniforms on the staff, well kept kitchens and bathrooms, telephones, comfortable lounges, radios, writing desks, night tables, a community room and a dining room. Are the patients encouraged to come to a central dining area rather than eat alone in their rooms?

It is well to know the visiting hours and policies, what facilities are available for patients to entertain guests privately, and whether the patient has the opportunity to practice his religion. Does the home have accomodations for married couples who wish private quarters?

Friendly relations between patients and staff are signs of a congenial, well-run nursing home. If possible, visit a patient in the home when you are not on a guided tour and observe the everyday attitude of staff toward patients.

Try to find someone who has had experience with the nursing home, either as a patient or through relatives or friends who have lived there. Ask your physician how many of his patients have transferred from the facility over a period of time to other nursing homes and why. Find out if volunteers from community service groups are connected with the home. Can the patient bring his personal belongings and some of his furniture, such as a favorite rocker?

### Costs

Find out what the nursing home rate covers in addition to nursing care, room and board. Is the fee on a monthly or weekly basis? Are extra charges made for drugs, special diets, extra nursing care, and such personal services as spoon-feeding, tray service, personal laundry, shampoos, haircuts and shaving? How much?

As in the hospital, a private room is more expensive than a two- or four-bed room.

Higher cost, of course, does not guarantee better care. But usually the homes which are better staffed, and have more nurses, tend to charge more. The cost of nursing home care basically depends on the facilities a patient desires for comfortable, homelike living, and the extent of medical nursing and personal care he will need.

Find out whether your health insurance covers nursing home care, and to what extent. If the patient is 65 or over, and has been enrolled for health care benefits under the Social Security Act (Medicare) he is entitled to payment for part of the cost of his care in any home which qualifies for participation in the Medicare program. Find out if the home you are considering is so qualified.

A quality nursing home will make every reasonable effort to help restore patients to the maximum degree of independence and self-help possible. For many patients, such a facility will not be the end of the road, but an intermediate step between the hospital and returning home.

# FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511 Telephone 865-0587

Timothy B. Norbeck, *Executive Director*
Josephine P. Lindquist, *Associate Executive Director*

Francis G. Sweeney
*Assistant Executive Director*
*Public Affairs*

Robert J. Brunell
*Assistant Executive Director*
*Scientific Activities*

Richard J. Fiorentino
*Coordinator*
*Special Services*

## COUNCIL MEETING

Thursday, October 15, 1981

### Attendance

Present were: Drs. Backhus, Mendillo, Sadowski, Hecklau, James, Hess, Van Syckle, Abbot, Rubinow, Anderson, Freedman, Barrett, Ragusa, Orphanos, Beck, Kaess, McDonnell, Czarsty, Sonnen and Hayes.

Also present: Mr. Norbeck, Mrs. Lindquist, Mr. Sweeney, Mr. Brunell, Mr. Fiorentino, Mr. Tomat (FCMA) and Dr. C. Callan.

Absent were: Drs. Canzonetti, Parrella, Doctor, Friedberg, Whalen, Jr., Petrie, Jameson, Magram, Zlotsky, Seide, Shenker, Bobruff and Fabro.

### Reports on State and Federal Agencies

Orvan W. Hess, M.D., Chairman of the Ad Hoc Committee on Health Systems Agencies, reported that there would be an all-day symposium Friday, October 16, 1981, at HSA II in Woodbridge concerning "Connecticut - Future Options for Health Planning." Mr. Fiorentino, Staff, expanded upon this stating that this was a consultation presentation by David Helms of the Alpha Center For Health Planning of Washington, D.C. and that attendees would include all executive directors of Connecticut's 5 HSAs, the Staff of Statewide Health Planning Development Agency (SHPDA) and HSA Board members. The agenda of meeting would include the status of Federal funding for health planning, scenarios for local health planning, and selection of an action plan of option(s) for new management styles.

Jerome K. Freedman, M.D., Chairman of the Committee on Statewide Medical Planning, noted that the Blue Cross and Blue Shield has been and will continue to be actively involved in Health Maintenance Organizations (HMOs). Mr. Fiorentino advised the Council of the Blues satellite expansion of the Connecticut Health Plan (a closed panel HMO in Bridgeport) into the Danbury-Southbury and the Meriden-Wallingford areas.

Merrill B. Rubinow, M.D., of Hartford, added that he had attended a meeting where the Blues had offered a two hour presentation concerning a review program for patients and Independent Practice Associations (IPAs) and that the prevalent attitude displayed by the Blues' presentation was negative towards attitudes of physicians.

### Report of Fiscal Subcommittee RE Budget for 1982

John Mendillo, M.D., Treasurer, presented a detailed report on the proposed budget for 1981. Following a complete analysis of the budget, it was VOTED to approve the budget submitted by the Fiscal Subcommittee with some amendments. It was further VOTED to approve the Fiscal Subcommittee's recommendations that the dues remain at $150.00 and to transmit the budget to the House of Delegates with Council recommendation for approval by the House.

In reviewing the Financial Aid Fund for medical students, which appears as a line item in the budget, it was VOTED to authorize the Yale and UConn University Schools of Medicine to authorize student loans up to $1,000; previous limit was $500.

It was also VOTED that the Executive Director prepare a list of job descriptions including salary ranges for the guidance of the Fiscal Subcommittee at future budget deliberations.

It was further VOTED to commend the Fiscal Subcommittee for their efforts in preparing the 1982 Budget.

### Request for CSMS Joint Medical-Legal Liaison Committee With the Connecticut Bar Association

It was VOTED to approve the formation of the subject committee to be appointed by the Chairman of the Council.

### Cumulative Minutes of Committee Meetings

It was VOTED to receive as information, and transmit to the Journal Editor, the minutes of the meetings of the Committee on the Medical Aspects of Sports, 5/21/81; Committee on Third Party Payments, 6/9/81; Committee on Public Health, 6/11/81; Cancer Coordinating Committee, 7/15/81; Committee on Perinatal Morbidity and Mortality, 8/10/81 and Committee on Public Health, 9/10/81.

### Report of the Delegate to the New Hampshire Medical Society

It was VOTED to accept as information and with commendation the report on the subject meeting submitted by Guy W. Van Syckle, M.D.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on October 15, 1981. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

## A Diamond Jubilee for a CSMS Centenarian

Maude Taylor Griswold, M.D., retired general practitioner of Torrington, receives flowers in ceremonies honoring her long service to the Connecticut State Medical Society. On October 23, 1981, she celebrated her 100th birthday, as well as 75 years as a member of the CSMS.

Presenting the bouquet are: (L-R) Timothy B. Norbeck, Executive Director of the Connecticut State Medical Society; Mrs. Patricia Castelli, Secretary, Litchfield County Medical Association; and Todd E. Anderson, M.D., President, Litchfield County Medical Association.

Dr. Griswold was born in Hartford in 1881 and received her medical degree at Tufts University in 1905. She currently resides at Wolcott Hall Convalescent Home in Torrington. A member of the Litchfield County Medical Association, Dr. Griswold retired from medical practice in 1959.

Holiday Traditions

The door of the Inn opens and the warmth and splendor of holiday dining surround you.
Call for reservations.
(203) 767-0330.

★★★★
Copper Beech Inn
Ivoryton, Ct 06442 203-767-0330

## PSROS Are Not "Agencies" of the Federal Government

On September 30, 1981 the U.S. Court of Appeals for the District of Columbia reversed the decision of the U.S. District Court in Washington and held that a Professional Standards Review Organization (PSRO) was not an "agency of the federal government for purposes of the Freedom of Information Act (Public Citizen Health Research Group v. Department of Health, Education and Welfare). The case was initiated by Public Citizen against the Department of Health, Education and Welfare (now the Department of Health and Human Services) and the National Capital Medical Foundation (the D.C. PSRO) to compel disclosure of documents.

The Foundation moved to dismiss the suit saying that it is not an agency within the meaning of the Freedom of Information Act (FOIA), and that its records, therefore, are not subject to disclosure under the Act. Under the FOIA, the term "agency" includes any executive department, military department, government corporation, government controlled corporation, or other establishment in the executive branch of the government, or any independent regulatory agency. In holding that the Foundation is a government agency the District Court relied upon two factors: (1) the Foundation has authority to make decisions binding on the federal government, and (2) the court found that it was subject to day-to-day federal control.

In reversing the District Judge, the Court of Appeals relied extensively on the legislative history surrounding enactment of the PSRO program in 1972. Judge Robb quoted from a Senate Report explaining the PSRO program to show Congress' intent on the matter:

> "The Committee has, therefore, included an amendment as it did in HR 17550, which authorizes the establishment of independent Professional Standards Review Organizations by means of which practicing physicians would assume responsibility for reviewing the appropriateness and quality of the services provided under Medicare and Medicaid . . . It is preferable and appropriate that organizations of professionals undertake review of members of their profession rather than for government to assume that role."

Other reasons given for the decision were that "the Foundation is a corporation organized under the law of the District of Columbia and not under federal law," and that "its employees are not government employees."

Circuit Judge Tamm in a concurring opinion emphasized his belief that "the Court's action today does not establish explicitly or implicitly a rigid rule of general applicability for determining whether an entity is an 'agency' for FOIA purposes." In a dissent Judge Mikva stated that since PSROs have independent and largely unreviewable decision-making authority they are, therefore, an "agency" for FOIA purposes.

—Legislative Roundup—October 23, 1981

# IN MEMORIAM

**BENDETT, RODMAN J.,** Tufts University Medical School, 1955. Dr. Bendett was a gastroenterologist in the Hartford area since 1960. He served in the U.S. Army from 1957 to 1959, and was a director of Mount Sinai's gastroenterology division and a past president of the hospital's medical staff. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Bendett died September 29, 1981, at the age of 52.

**GREENHOUSE, BARNETT,** Yale Medical School, 1921. Dr. Greenhouse was a pioneer in insulin treatment of diabetes, and had practiced in the New Haven area since 1923. A veteran of World War I, he served in the Army Medical Corps from 1917 to 1918. He attained national prominence in diabetes education and detection as a teacher, lecturer, author and clinical investigator, founded and ran the diabetes clinic at the former Grace Hospital, and was the former director of the diabetes clinic named after him at Yale-New Haven Hospital. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Greenhouse died October 25, 1981, at the age of 86.

**IRWIN, HAROLD H.,** Tufts University Medical School, 1934, and was an internist in the New London area. A veteran of World War II, he was a lieutenant in the Navy Medical Corps, seeing action on Iwo Jima and at Guadalcanal. He was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Irwin retired and moved to Florida in 1975, where he died October 4, 1981, at the age of 74.

**KELLY, J. COLMAN,** Queen's University Medical School, 1928. He was a general practioner in the Fairfield area since 1931 and served in the U.S. Army from 1943 to 1946. He had also been medical examiner in Greenwich for the past 16 years. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Kelly died September 14, 1981, at the age of 80.

**SIMON, LOUIS G.,** New York University Medical School, 1927. Dr. Simon was a surgeon in the Fairfield area since 1928. In 1929 Dr. Simon started his own practice and served as attending surgeon, assistant director of the surgical division and director of the tumor clinic at Norwalk Hospital. He also worked in the emergency department from 1965 to 1971, in addition to writing more than a dozen medical papers. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Simon died October 4, 1981, at the age of 79.

# PHYSICIAN PLACEMENT SERVICE

**The Society maintains the Physician Placement Service as a service to the medical profession in Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiries of such opportunities. Information should be sent to 160 St. Ronan St., New Haven, CT 06511 (203-865-6822).**

**Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

## *OPPORTUNITIES FOR PRACTICE*

(If no name is listed, contact the Physician Placement Service for more details.)

### EMERGENCY MEDICINE

EMERGENCY PHYSICIAN—Full time position available at modern 226-bed community hospital in eastern Connecticut; 33,000 visits yearly; 42-hour work week; salary negotiable. Send CV to G.L. Springer, MD, Chief of Emergency Room Services, William W. Backus Hospital, 326 Washington St., Norwich, CT 06360.

### FAMILY PRACTICE

Two semi-retired physicians seek an associate in Family Practice or Internal Medicine to gradually take over two fully equipped offices in south-central Connecticut. Call 624-2333.

### INSTITUTIONAL MEDICINE

DEPUTY MEDICAL DIRECTOR/PHYSICIANS - Hospice Care, FT/PT, Inpatient and at Home services, 44-beds, Team approach, unique opportunity to help shape new program. Medical School faculty appointment possible. C.V. to S. Lack, M.D., Connecticut Hospice, 61 Burban Drive, Branford, CT 06405.

Immediate need for Physicians. Senior Physicians and Internist. Temporary License available for those eligible for Connecticut Licensure. Contact: Superintendent, Norwich Hospital, Norwich, CT 06360.

Full Time Director, Division of Medical Services, Board Certified in Internal Medicine; with interests in Rehabilitation Medicine; to manage general medical service in 121 bed specialty hospital. Supervisory experience necessary. Interest in quality assurance and infection control an asset. Attractive competitive salary and fringe benefit program. Housing available. Send resume and salary requirement to: The President, The Gaylord Hospital, Box 400, Wallingford, CT 06492.

### PEDIATRICS

Excellent opportunity for a well qualified Pediatrician to practice in a very desirable area. Close to teaching hospitals. Terms negotiable. Write: CSMS:PED/JM, (to be forwarded).

## *PHYSICIANS WISHING TO LOCATE IN CONNECTICUT*

### FAMILY PRACTICE

July '82. Age: 34. Nat'l bds.; AB elig.; MD, Case Western Reserve; Int. and Res., Duke Univ. Medical Center. Group practice preferred. Contact: Peter deGreef Jacobi, M.D., 2020 Sunset Ave., Durham, N.C. 22705.

August '82. Presently employed in Emergency Department, Kennebec Valley Medical Center with over one year experience. Nat'l bds.; AB cert.; MD, Suny Downstate Medical Center; Int. and Res., Maine-Dartmouth Family Practice Residency. Prefer group practice in a medium size community. Contact: Martin M. Keibel, M.D., 329 Water St., Hallowell, ME 04347.

### INDUSTRIAL MEDICINE

July '82. Age: 35. Licensed in Connecticut. MD, LMCC (Canada); Int. and Res., St. Mary's Hospital and The Whittington Hospital, London, England. 5 years of private practice (Family Practice), Ontario, Canada; British Rail—Industrial Medicine. Hartford—Farmington area preferred. Contact: Paul B. West, M.D., 44 Harvey Road, Guildford, Surrey, England CU1 3SE.

### INTERNAL MEDICINE

Endocrinology. July '82. Age: 30. Nat'l bds.; AB cert.; MD, University of Connecticut; Int. and Res., Long Island Jewish-Hillside Medical Center; Fellowship, University of Connecticut Health Center. Solo, group, associate or institutional practice preferred. Residency in Internal Medicine included an additional year as chief resident in medicine. Contact: Arthur H. Fisher, M.D., 110 Kane St., West Hartford, CT 06119.

Summer '82. Age: 29. AB elig.; MD, Univ. of Graf, Austria; Int. and Res., The Hospital of St. Raphael, New Haven, CT. Prefers Medium, solo, group or assoc. type practice. Write: IM/AR, c/o CSMS.

GASTROENTEROLOGY. July '82. Age 30. Nat'l bds.; AB cert.; MD, NYU School of Medicine; Int., Res. and Fellowship, Beth Israel Medical Center, NYC. Solo, group or assoc. practice preferred. Contact: David O. Guttman, M.D., 353 East 17 St., New York, NY 10003.

GASTROENTEROLOGY. July '82. Age: 29. Nat'l bds.; AB cert.; MD, Brown University; Int., Res., and Fellowship, Rhode Island Hospital. Trained in endoscopic procedures, including ERCP and sclerosis of esophageal varices. Also trained in trans-hepatic cholangiograms and interpreting esophageal manometry. Solo, group, assoc. or institutional practice. Write: IM/CBG, c/o CSMS.

INFECTIOUS DISEASES. July '82. Age: 30. Nat'l bds.; AB cert.; MD, Medical College of Wisconsin; Int. and Res., Rutgers Medical School; Fellowship, Univ. of California, San Francisco. Experience in the training of housestaff and medical students in a University setting. Also, training in infection control, public health problems including treatment and prevention of tuberculosis. Group or institutional practice in medium or large community preferred. Contact: Lawrence Dall, M.D., 5285 Diamond Heights Blvd. #104, San Francisco, CA 94131.

HEMATOLOGY/ONCOLOGY. July '82. Age: 29. AB elig.; MD, University of Delhi, India; Int., Univ. of Conn., Health Center; Res., College of Medicine & Dentistry of New Jersey, Jersey City Medical Center, NJ; Fellowship, State University of NY, Downstate Medical Center. Solo, group or institutional practice preferred. Write: Sushil K. Mehrotra, M.D., 390 Maryland Ave., Apt. 3-A, Staten Island, NY 10305.

Hematology/Oncology. July '82. Age: 29. Nat'l bds.; AB cert.; MD, New York University; Int., E.J. Meyer Hospital; Res., Montefiore Hospital & Medical Center; Fellowship, New York University. Group or associate practice preferred in large community. Contact: Douglas E. Faig, M.D., 3450 Wayne Ave., 23D, Bronx, NY 10467.

INFECTIOUS DISEASES. July '82. Age: 28. Nat'l bds.; AB elig.; MD, Dartmouth Medical School, Hanover, NH; Int., Res., and Fellowship, Duke Univ. Med. Ctr., Durham, NC. Primarily interested in practicing general internal medicine, but desires the flexibility to also practice some subspecialty medicine in a group type practice. Write: Mark B. Moeller, M.D., 4231-A American Dr., Durham, NC 27705.

# Have you considered participation?

- The Century Contract Comprehensive Schedule of Services has been increased *three times* in 18 months.
- These increases, in the aggregate, have amounted to 51.6%.
- We will continue to update the Century Contract schedule annually.
- Participating Providers receive prompt payments directly from Blue Cross & Blue Shield.
- Your participation can reduce receivables and eliminate some billing steps.
- Over one million Connecticut residents are Century Contract members for whom claims totaling $82.5 million were paid in 1980.
- Century Contract members highly appreciate the Full Payment provision made possible by the cooperation of Participating Physicians and other Participating Providers.

**Blue Cross**
**Blue Shield**
of Connecticut

THE HEALTH CARING PEOPLE

If you want further information on our coverage, our payment policies, and how to enroll as a Participating Provider, call our office or complete the form below and send it to:

Blue Cross & Blue Shield of Connecticut
Professional Relations Department
370 Bassett Road
North Haven, CT 06473

Telephone: 1-800-922-1742 or 265-8203

Name ______________________ Telephone ______________

Address ______________________________________

City ______________ State ____________ Zip ____________

CM781

## INTERNAL MEDICINE—Continued

RHEUMATOLOGY. May '82. Age: 32. Presently in practice. Nat'l bds.; AB cert.; MD, Cornell Univ. Medical College; Int. and Res., NC Memorial Hospital, Chapel Hill, NC; Fellowship, Univ. of NC at Chapel Hill. Group or assoc. practice in medium to large size community preferred. Contact, IM-RJQ, c/o CSMS.

RHEUMATOLOGY. July '82. Age: 29. Nat'l bds.; AB cert.; MD, Albert Einstein College of Medicine; Int. and Res., Montefiore Hospital, Bronx, NY; Fellowship, Downstate Medical Center, Brooklyn, NY. Group or assoc. practice preferred. Write: James R. Schumacher, M.D., 1199 Park Ave., New York, NY 10028.

GASTROENTEROLOGY. July '82. Age: 28. AB cert.; MD, Baroda Medical College, India. Int., Res., and Fellowship, The Brooklyn Cumberland Medical Center, NY. Group, assoc. and institutional practice in medium or large community preferred. Contact: Parendra P. Banker, M.D., Apt. 6A, 240 Willoughby St., Brooklyn, NY 11201.

July '82. Age: 28. Nat'l bds.; AB elig.; MD, Columbia University. Int. and Res., University of Michigan Hospitals. Prefer group or assoc. practice in small to medium size community. Write: James A. Scerbo, M.D., 3582 Green Brier Blvd., Ann Arbor, MI 48105.

July '82. Age: 30. Nat'l bds.; AB cert.; MD, Creighton University; Int. and Res., Barnes Hospital (Washington Univ.); Fellowship, University of Michigan. Would prefer Rheumatology in a medium to large community with a group or assoc. type practice. Contact: Michael A. Gordon, M.D., 1418 Iroquois, Ann Arbor, MI 48104.

July '81. Age: 34. Nat'l bds.; AB cert.; MD, The Medical College of Wisconsin; Int., Los Angeles County—USC Medical Center; Res., Montreal General Hospital, (McGill Univ.); Fellowship, Univ. of Louisville and The Medical College of PA. Group or assoc. practice in any size community. Desires non-invasive cardiology practice. Have expertise in 2-D Echocardiography. Contact: Mark B. Workman, M.D., 3120 W. School House Lane, Philadelphia, PA 19144.

CARDIOLOGIST. Age: 31. AB cert.; MD, Bangalore Medical College, India; Int., Mount Vernon Hospital, NY; Res., Mount Vernon Hospital, NY; Fellowship, VA Medical Center, Dayton, OH. Interested in solo practice in Cardiology and Internal Medicine and is trained in noninvasive and invasive aspects of cardiology. Contact: Hullukunte Shivaprasad, M.D., 747 Kildare Place, Trotwood, Ohio 45426.

GASTROENTEROLOGY. June '82. Age: 29. Nat'l bds.; AB, cert.; MD, Case Western Reserve, Cleveland, OH; Int., The NY Hospital, NYC; Res., The New York Hospital; Fellowship, The New York Hospital and The Memorial Sloan-Kettering Cancer Center. Prefers an academically oriented group practice largely limited to gastroenterology and hepatology. Contact: Jeffrey Kutscher, M.D., 435 E 70th Street, New York, NY 10021.

GASTROENTEROLOGY. July '82. Age: 34. Nat'l bds.; AB cert.; MD, Wayne State University; Int., Wayne State University Affiliated Hospitals; Res., Montefiore Hospital, Bronx, NY; Fellowship, St. Luke's-Roosevelt Medical Center, NYC. Prefers solo, group, assoc., or institutional practice in a cosmopolitan town. Contact: Nancy B. Merrell, M.D., 3920 Orloff Ave., Bronx, NY 10463.

July '82. Age: 29. Nat'l bds.; AB cert.; MD, Mt. Sinai School of Medicine; Int., Downstate Medical Center; Res., Mt. Siani Hospital; Fellowship, Montefiore Hospital. Medium size practice for solo, group or assoc. Would prefer primarily pulmonary practice with ability to perform bronchoscopies, pleural biopsies, transthoracic needly aspirations and Swan-Ganz monitoring. Contact: Jerome R. Weiner, M.D., 6045 Spencer Ave., Bronx, NY 10471.

## OBSTETRICS AND GYNECOLOGY

Summer '82. Age: 28. Nat'l bds.; FLEX; AB elig.; MD, Baylor College of Medicine; Int. and Res., Baylor College of Medicine Affiliated Hospitals. Would prefer solo or shared coverage. Western or Southern Connecticut preferred—as far east as New Haven. Contact: Robert K. Zurawin, M.D., 2475 Underwood #166, Houston, TX 77030.

## OBSTETRICS AND GYNECOLOGY—Continued

July '82. Age: 31. Nat'l bds.; MD, SUNY Downstate Medical Center; Int. and Res., Jackson Memorial Hospital. Group or assoc. type practice preferred in a medium to large size community. Contact: Alan W. Black, M.D., 800 Parkview Dr., Suite 1027, Hallandale, FL 33009.

## OPHTHALMOLOGY

July '82. Age: 30. Connecticut License. MD, Universidad Autonom de Guadalajara, Mexico; Int., Fifth Pathway and Long Island College Hosp., Brooklyn, NY; Res., Univ. of Tenn. Clinical Ed. Ctr. and Baroness Erlanger & T.C. Thompson Children's Hospital, Chattanooga, TN; Fellowship, Tufts New England Medical Ctr., Boston, MA. Solo, group or assoc. practice preferred. Write: Charles D. Howard, M.D., 2605 Stearns Hill Rd., Waltham, MA 02154.

## ORTHOPEDIC SURGERY

July '82. Age: 28. Nat'l bds; AB elig.; MD, Creighton Univ.; Int. and Res., Univ. of Michigan Hospital. Group or associate practice in small to medium community. Write: Cary Skolnick, M.D., 2250 N. Circle Drive, Ann Arbor, MI 48103.

DIAGNOSTIC RADIOLOGY. July '82. Age: 29. Licensed in Connecticut. Nat'l bds. AB elig. MD, Albany Medical College, Albany, NY; Int., Greenwich Hospital, Greenwich, CT; Res., Hartford Hospital, Hartford, CT. Prefers group practice. Contact: Jeffrey D. Blonstein, M.D., 29A Arnold Way, West Hartford, CT 06119.

## SURGERY

July '82. Age: 31. Nat'l bds. Ab elig. MD, Univ. of Chicago, Pritzker, Chicago, IL. Int. and Res., State Univ. of NY Upstate Med. Center, Syracuse, NY; Fellowship, Baystate Med. Center, Springfield, MA (Periph Vascular). Group, assoc. or institutional practice in medium size community preferred. Write: Joel A. Berman, M.D., 35C Father Kolbe Dr., Holyoke, MA 01040.

PLASTIC SURGERY. Date available negotiable. Presently in practice. Age: 41. AB cert. MD, Ohio State Univ. Int. and Res., Akron City Hospital, Akron, OH; Fellowship, St. Louis University, St. Louis, MO. Solo or assoc. practice in medium size community preferred. Write: Denis J. Winder, M.D., 980 N. 2100W, Vernal, Utah 84078.

August '82. Age: 30. Nat'l bds. AB elig. MD, University of Puerto Rico. Int. and Res., S.U.N.Y. at Stonybrook; Fellowship, Allentown & Sacred Heart Hospital Center, Allentown, PA. Would like to practice both General/Vascular Surgery but will strongly consider a position in Vascular Surgery alone. Prefer group or assoc. type practice. Write: Ruben J. Delgado, M.D., Spring Ridge M-26, Whitehall, PA 18052.

Aug. '82. Age 30. MD, Univ. of Puerto Rico. Int. & Res., State Univ. of NY at Stony Brook; Fellowship, Allentown and Sacred Heart Hosp. Center. Nat'l bds. Medium to large, group or assoc. practice in General Surgery and Peripheral Vascular Surgery preferred. Write: Ruben J. Delgado, M.D., 293 First St., Mineola, NY 11501.

## UROLOGY

Available immediately. Age 31. Nat'l bds; AB elig. MD, The M.S. Univ. of Baroda, India; Int. and Res., The Maimonides Med. Center, Brooklyn; Fellowship, The Hospital for Sick Children, Toronto, Canada. Solo, group, assoc. or institutional practice preferred. Write: Dilip R. Patel, M.D., 483 Ocean Pkwy. #4-B, Brooklyn, NY 11218.

Available immediately. Age: 50. Presently in practice. AB cert.; MD, University of Naples Medical School, Naples, Italy; Int. Fort Sanders Presb. Hospital, Knoxville, TN; Res., St. Sacrement Hospital, Quebec and NY Medical College. Solo, group or assoc. practice. Write: Alessandro Colalillo, M.D., P.O. Box 68, Freeport, IL 61032.

AYR INSURANCE AGENCY

JANIS AYR ESPOSITO
ALISON AYR

"Growing Bigger by Serving Better"

Group Accident and Sickness Insurance
Group Major Medical Insurance
Group Excess Major Medical Insurance
Group Overhead Expense Insurance

**SPONSORED BY**
**THE CONNECTICUT STATE MEDICAL SOCIETY**

160 St. Ronan Street, New Haven, Connecticut 06511
TELEPHONE 787-5947

ELMCREST

A COMPREHENSIVE
MENTAL HEALTH TREATMENT CENTER
FOR ADULTS AND ADOLESCENTS

**ELMCREST PSYCHIATRIC INSTITUTE** is a 105-bed private mental health treatment center offering a comprehensive program of diagnostic, consultative, treatment, rehabilitative, and educational services for adults and adolescents. Psychological and emotional disorders are treated within the context of a therapeutic community.

**FOR FURTHER INFORMATION CONTACT:**
**Matthew Weinstein**
*Administrator*

**Lane Ameen,** M.D., F.A.P.A
*Medical Director*
**M. Joan Green,** M.D.
*Clinical Director*

Elmcrest accepts Blue Cross, CHAMPUS, Medicare, and other insurance coverage.

**THE TREATMENT PROGRAM INCLUDES:**

☐ DIAGNOSTIC SERVICES AND PSYCHOPHARMACOTHERAPY
☐ CRISIS INTERVENTION AND EMERGENCY SERVICES
☐ INDIVIDUAL, GROUP, AND FAMILY PSYCHOTHERAPY
☐ ADOLESCENT/SCHOOL PSYCHOEDUCATIONAL PROGRAM
☐ DRUG, ALCOHOL, AND VOCATIONAL REHABILITATION
☐ CREATIVE THERAPIES SERVICE (Art, Recreation, Occupational, Dance/Movement, Horticulture)
☐ GERIATRIC GUIDANCE CENTER
☐ DAY HOSPITAL

ep

**ELMCREST PSYCHIATRIC INSTITUTE**
25 Marlborough Street
PORTLAND, CONNECTICUT 06480
Telephone (203) 342-0480

# Connecticut Medicine

## Connecticut State Medical Journal

## SUBJECT INDEX

Volume 45 December 1981

A

Adult Fitness, Beneficial Effects of Exercise and Current Concepts in (Camaione and Sinatra) .......... x 620
Advanced Internal Medicine (AIM) (Davidoff) ......... iii 167
Aerobic Muscular Exercise, Applications in Clinical Medicine for Diagnosis and Therapy (Scherzer) ....... x 628
AMA, Judicial Council of the, Terminal Illness ......... iv 249
AMA, Patient Package Inserts ........................ iii 193
AMA, Patient's Right to Die in Dignity ................ iv 253
AMA, Where Stands on the Issues .................... iii 209
AMA Board of Trustees, Confidentiality of Occupational Medical Records ............................... vii 459
AMA Board of Trustees, Council on Medical Education and Council on Medical Service, AMA Policy on Physician's Assistants ............................. v 311
AMA Council on Medical Education, Continuing Medical Education .............................. xii 783
AMA Council on Medical Education, Moratorium on Recertification ..................................... i 42
AMA Council on Medical Service, Hospice Programs ... vi 393
AMA Council on Medical Service, Status Report on Health Maintenance Organizations ........................ vi 389
AMA Council on Medical Service, Study of Health Maintenance Organizations ......................... ii 119
AMA Council on Medical Service, Use of Phrase "Usual, Customary and Reasonable" by Health Insurance Carriers ......................................... vii 458
American Medical Women's Association and Today's Practicing Woman Physician, The (Harlin) .......... viii 493
Aneurysm of the Common Carotid Artery by Resection and Vein Graft, The Treatment of (Saieh with Marjani and Dunn) ..................................... vii 425
Angiography in Fever of Unknown Origin (Glickman) .... v 296
Annual Meeting, Program, 189th, CSMS ......... iv273, v 337
Annual Reports, CSMS, 1980-1981 ................. viii 525
Anorexia Nervosa, Hematologic Findings in (Myers with Perkerson, Witter and Granville) ...................... i 14
Appropriateness Review, A Beginning Or An End (Clinton) (Hospital Viewpoint) ..................... vi 371
Arthroscopic Knee Surgery in Athletes (Fulkerson) ...... x 642
Assembly, Report from the (First of Two Parts) (Second of Two Parts) (Coatsworth) (Hospital Viewpoint) ........................ ix 587, x 647

B

Benzodiazepine Dependency in Alcoholics (Schuster and Humphries) ........................... i 11
Biliary Enteric Fistulas, Dual (Dean) ................ vii 432
Book Review ......................................... vii 472
Brain Death, A Political Process (Bertonazzi) .......... vii 454
Brain Death, A Reevaluation of the Harvard Criteria .... ix 597
Burn Management, Progress in, Retrospective Look (D'Aiuto) ......................................... xi 695

C

Cancer in an Industrialized Connecticut Town, An Epidemiologic Review of (Gershman with Most, Lewis and Marks) ................................. i 17
Cardiothoracic Trauma, Acute Management of (Kay) .... ix 547
Carotid Artery Surgery for Cerebral Vascular Insufficiency, Results of (Schroeder) ............................ xii 759
CEA as a Cancer Marker (Consensus Development Summaries) .................................... xi 735
Cervical Cancer Screening, Pap Smear (Consensus Development Summaries) ................. i 33
Cesarean Childbirth (Consensus Development Summaries) .................................... iii 155
Chromosomal Translocation, t(1p+,7q−), Unusual, and Familial Leukemia in a Patient with Chronic Myelomonocytic Leukemia (Roush) ............... xii 767
CT Diagnosis of Infected Prosthetic Graft Sites (Triolo and Russo, Jr.) ........................... xi 699
Computed Tomography Evaluation of Abscesses (Jaffe) ..... v 291
Computerized Tomography in the Evaluation of Lumbar Disc Herniation (Harley with Sava and Fleming) ...... vi 349
Congenital Dysplasia of the Hip, Detection of, An Update (Renshaw with Cary and Gage) ................... vii 427
Connecticut Surgery, The Legacy of, Case Histories Revisited (Touloukian) ............................ iv 241
Coronary Artery Bypass Surgery (Consensus Development Summaries) ...................................... x 649
Council Minutes ........ ii 133, iv 275, v 341, vii 475, viii 539, x 679, xii 806

D

Dean's Office, Reflections from the ..... i 49, ii 129, iii 199, iv 263, v 327, vi 411, vii 465, viii 531, ix 607, x 671, xi 747, xii 801
Decerebrate Patient, Eighteen Years of Care, A (Field and Romanus) ............................ xi 717
Decerebrate Patient Commentaries ...... xi 719, 720, 721, 722
Dental Caries, Connecticut Physician's Role in Preventing (Tinanoff with Pinkerton and Ramanan) ............. iii 141
Depression Among Women in Medicine (Rothblum) .... viii 501
DES Exposure In-Utero, Diagnostic Evaluation of Patients with (Spangler with Bibro and Schwartz) ............ ix 215
Disease Illness, An Approach to the Patient (Pasky, III) ..... vi 356
Drugs and Sport (Mangi and Jokl) .................... x 637

E

Emergency Room Utilization, An Initial Look (Lynch with Silverman and Delaney) (Hospital Viewpoint) ......... v 309
Endogenous Uveitis, A Multispecialty Problem (Abrahams) ..................................... xii 761
Endoscopy in Upper GI Bleeding (Consensus Development Summaries) ..................................... vii 445
Epitomes of Progress, (Important Advances in Clinical Medicine) Dermatology .................................. vi 373

General and Family Practice ... iii 150
General Surgery ... iv 225
Obstetrics and Gynecology ... xi 701
Radiology ... ix 563
Esophago-Pulmonary Toxicity from Concomitant Use of Adriamycin and Irradiation (Son and Kapp) ... xii 755
Ethics in the Professions, Center for the Study of (Frankel) ... xii 777
Executive Director's Office, From the ... iii 211
EDITORIALS:
Art of Medication, A Review (Fabro) ... iii 204
Bacchiochi Case, Continued, (Fabro) ... v 334
Bacchiochi vs. Johnson Memorial Hospital (Fabro) ... iv 267
Breast Cancer Questions—and Answers (Goldenberg) x 674
Cancer in Childhood, A Study of Survivors of (Meigs) ... iv 266
Chronic Vegetative State (Fabro) ... xi 744
Ethics, the Press and Yale (Warshaw) ... viii 535
Examinations by the School Physician, Students' (Shenker) ... x 674
Family, Present, Past and Future, (Fleck) ... viii 536
Geriatrics and Manpower (Butler) ... i 54
Governor Ella T. Grasso (Fabro) ... iii 203
Health Advocacy—Whose Job Is It? (Springer) ... ii 131
Iatrogenic Pathology, The New Pathology (Duke) ... iv 266
Malpractice, Divide and Conquer (Rubinow) ... xi 743
Measure for Measure (Schwartz) ... xi 743
Nurse-Physician Joint Practice (Stuart) ... i 53
Radiologic and Nuclear Medicine Techniques in the Diagnosis (Andriole and Taylor) ... v 331
Research by Medical Students (Volle) ... vii 469
St. Raphael's CT Scanner Decision, Judicial Deference or Judicial Timidity, (Ronai) ... v 332
Sexually Transmitted Diseases, Those "Newer" (Neumann) ... ix 612
Sports for the Handicapped (Flynn) ... ix 611
Sports Medicine, Connecticut Medicine Symposium on (Gossling and Fulkerson) ... x 673
Surgical Treatment, The Identification of (Pool) ... vi 407
Tobacco Smoke on the Non-Smoker, The Effect of (Yesner) ... vii 470
Two Years Before the Mast (Rubinow) ... xii 803
Women in Medicine (Callan) ... viii 535

F

FTC and Health Care, The Role of Competition (Pertschuk) ... iv 238
Fiscal Impact of Hospital Regulation, The (Crawford) (Hospital Viewpoint) ... viii 517
Fraud, Scientific and Scientific Ethics (Weinstein) ... x 655
Frozen Plasma Use, Patterns of (Silbert with Bove, Dubin and Bush) ... viii 507

G

Gallium-67 in the Diagnosis of Occult Infections, Use of (Hoffer) ... v 288

H

Health Advocacy, Caring for the Whole Patient (Marks) ... ii 103
Heimlich Maneuver in Cold-Water Drowning (Gordon and Terranova) ... xii 775
Hepatic Veins, Transpericardial Stab Wound of the, Giving Rise to Cardiac Tamponade (Stahl with Skydell and Kinder) ... xi 687
Hepatitis A, B and N, Some Practical Aspects (Neumann) ... xi 713
Holistic Medicine (Siegel and Siegel) ... vii 441
Hospital of St. Raphael vs. Commission on Hospitals and Health Care (Connecticut Supreme Court) ... v 305
Hospital Responsibility to Patients—for Physicians, A Most Important Case on (Horty) ... vi 383
Hospital Trustee and Quality Assurance, The (Tilson) (Hospital Viewpoint) ... iv 245
House of Delegates, Summary of Proceedings, Semi-Annual Meeting, Annual Meeting ... i 68, vi 412
Hyaline Membrane Disease in Twin B Following Prolonged Rupture of Membranes for Twin A (Wender with Kandall, Leppert and Berkowitz) ... ii 83
Hypertension in the Elderly (National High Blood Pressure Education Program Coordinating Committee) ... iv 233
Hypothermia in Winter and High Altitude Sports (Hampton) ... x 633
Hysterectomy in Women Aged 15-44, United States, 1970-1978 ... x 663

I

Infantile Starvation, Complacent (Heiger) ... viii 515
Influenza Vaccine Effectiveness, Two Epidemiological Studies, 1980-81 Outbreak (Chotkowski with Bilsel and Maleh) ... xii 773
Informed Consent, The Exceptions to (First of Two Parts) (Second of Two Parts) (Meisel) ... i 27, ii 107
Insurance Company for CSMS, A Physician-Owned (Recommendation of the Council to the House of Delegates) ... vi 399
Interesting Times (Todd) ... viii 518
Intussusception as an Unusual Complication of Metastatic Lung Cancer, (Katz with Hahn, Job and Toole) ... iv 220

L

Labriola, Senator Gerald, M.D., An Interview with (Fabro) ... x 645
Law, Medicine and Public Policy ... i 51, iii 201, iv 265, v 329, vii 467, viii 533, ix 609, xi 749
Legislative Inertia on Nontreatment Legislation (Bertonazzi) ... x 659
Letters to the Editor ... i 55, 56, iv 269, vii 473, x 677, xi 746
Leukocyte-Poor Red Blood Cells (Washed) Prevent Transfusion Reaction (Palermo and Bove) ... xii 753
Liability Insurance, Hospitals Can Require (Reed) ... iii 189
Life in Catholic Moral Theology Before the Karen Quinlan Case, The Development of the Doctrine of Ordinary and Extraordinary Means of Preserving (McCartney) ... xi 725
Life-Support Systems, Guidelines for Discontinuance of (Los Angeles County Medical Association and Los Angeles County Bar Association) ... xi 723
Lung, Multiple Myeloma and Adenocarcinoma of the (Tung with White and McCormick) ... ix 555

M

Malpractice, Quality Assurance, and Continuing Education, A Linkage Past Due (Garrell) ... iii 175
Medical Grand Rounds, Yale University School of Medicine, Diseases of the Workplace, The Clinician's Role (Cullen and Robins) ... vi 363
Medical Malpractice Closed Claims Study, The (NAIC) (Sowka) ... ii 91
Medical Staff Privileges and the Law, A New Jersey Perspective (Maressa) ... ix 589
Medical Students' Abstracts (University of Connecticut) ... vii 449
Medicine and Me (Abram) ... iii 163
Medicolegal Issues, Current (The Citation) ... i 45, iii 195, v 319, vii 456, viii 523, ix 601, xi 739, xii 793
Memoriam, In ... i 56, ii 135, iii 210, v 335, vii 477, viii 537, x 681, xii 808

Microcomputer in Medical Practice, The (Hayes) ....... xi 707
Month in Washington ....... i 47, ii 125, iv 257, v 321, vi 403, vii 461, viii 529, ix 603, x 665, xi 741, xii 795

N

Neck Mass, Evaluation of, Computed Tomography (Son)..... ii 75
Necrotizing Fasciitis of the Perineum (Shieh and Wihbey) ... i 4
New Members ............................... ii 136, vii 478
Nocturnal Penile Tumescence (Wabrek) ............... xi 559
Nurse-Physician Collaboration (Ritter).................. i 23
Nursing Shortage, A Long-Term Dilemma, The (Novicky).................................. iii 148

O

OTA Finds Cost-Benefit Analysis Inadequate (Hess) .... iv 254

P

Patient Care Review, Quality of (PSRO II) ............. ii 113
Peer Review Case, A Maryland, Legal Update (Isele) ... iii 191
Percutaneous Transluminal Angioplasty, Reversal of the Uremic Syndrome with (Redler with Lakin, Lapkin and Graeber) ............................ viii 511
Peritoneovenous Shunting for Malignant Ascites, Complications of (Vo with Tortora, DeMaio and Aseltine, Jr.)........................................ i 1
Physical Education and the Handicapped (Ersing)....... ix 578
Physician Placement Service ....... i 72, ii 137, iii 212, iv 278, v 346, vi 414, vii 481, viii 542, ix 615, x 683, xi 750, xii 809
Pneumococcal Polysaccharide Vaccine ................ xii 779
President, Address of the............................ vi 405
President's Page, The ..... ii 127, iii 197, iv 261, v 326, vi 410, vii 463, ix 605, x 669
PSRO Work for Your Medical Staff, Making (Savage) ... ii 115
Professional Standards Review Organization Program (Nelson) ................................. i 39
Prostaglandins, An Overview (Weisblat) ............... iii 144
Psychiatrist's View of the Challenges of Professional and Family Responsibilities, A Woman (Solomon) ... viii 487
Psychiatry, Carol Nadelson, M.D., A Leader in (Callan) ...................................... viii 491

Q

Quality Assurance In Hospitals, Improving (Klopfer) (Hospital Viewpoint)............................ vii 443
Questionnaire, Committee Service .................... xii 797

R

Radionuclides, New, in the Diagnosis of Obscure Infections (Thakur) ................................ v 302
Reforming the State Hospital Commission (May) (Hospital Viewpoint) ............................. xi 733
Retroperitoneal Tumors, Primary, Presentation, Investigation, Management (Stahl) .................. ix 545
Reye Syndrome—Ohio, Michigan (Epidemiologic Notes and Reports)....................................... i 37

S

Second Regional Conference on Women in Medicine, The (Callan) .................................. viii 504
Seizure Patients, Long Term Monitoring of (Holmes with McKeever and Russman)....................... v 358
Serratia Empyema Post Pneumonectomy Treated with Thoracoplasty and Muscle Flap, Delayed (Zilberstein with Smith, Giwa, Koornick, Dietch, Wilk and Soroff).... vi 353
Special Notices ............... iii 206, ix 271, viii 537, ix 614
Spinal Cord Injury Center, A Report of the Acute (Wagner, Jr. with Chehrazi and Stewart)......................... xi 690
Sports for the Handicapped, Rehabilitative Benefits of (Molnar)........................................ ix 574
Sports for the Handicapped, Role of Primary Care Physician in (Healy).............................. ix 571
Sports Medicine Program, The University (Gossling and Fulkerson).................................. x 619
Sportsmedicine, Secondary School (Zlotsky) ............ x 625
Streptococcus Bovis Endocarditis and Colon Carcinoma (Saltzman with Brand and McKinley)............... iii 139
Stress of Medical Practice, Coping with the (Walker) .... ix 593
Suicide Among Physicians and Other Members of the Health-Care Team, Preventing, Work in Progress (Sargent) ... ix 583
Sulfinpyrazone Induced Uric Acid Urolithiasis with Acute Renal Failure (Kovalchik) .................. vii 423
Swiss Guidelines on Care of the Dying (Swiss Academy of Medical Sciences)................................ iv 247

T

Teenage Eating Behavior, Changing (Edelstein) ........ viii 496
Terminally Ill, Discontinuing Treatment for the, Ethical Considerations (Wolman) ................... xi 731
Therapeutic Plasmapheresis and Cytapheresis (Blumberg and Katz)............................... ii 85
Thrombolytic Therapy in Venous Thromboembolic Disease, The Use of (Rubin) .............................. ix 551
Thrombosis of the Axillary Artery and Brachial Plexus Injury Secondary to Shoulder Dislocation (Sarma with Saranchak, Levinson and Sigman)................. viii 513
Thrombosis of the Porcine Heterograft Heart Valve Bioprosthesis (Sands, Jr. with Lachman, Leach, Jr., Takata and McLucas)................................ i 7
Thyroiditis, Transient Hyperprolactinemia and Hyperthyroidism in Autoimmune (Mascardo and Sullivan)..... ii 78
Toxic Shock Syndrome, A New Disease but an Old Phenomenon, (Bollet)............................. iv 223
Tuberculosis, A Brief History of (Warring, Jr.) (History of Medicine) .................................... iii 177

U

Ultrasonographic Evaluation of Intracardiac Infection, Real-Time (Jaffe)................................. v 284
Ultrasound, Diagnosis of Occult Infection, in the (Rosenfield and Taylor) ............................ v 281

V

Virginia Woolf and Her Granddaughters, A Summer's Reading (Southgate)............................. viii 483
Virus Diagnostic Laboratory, Its Function in a VA Medical Center, The (Landry and Hsiung).................. vii 417
Voice Disorders, Current Concepts in the Surgical Treatment of (Carpenter, III and Snyder, III) .................... ii 81

W

Werner Forssmann (1904-1979) and His Unusual Success Story (Steckelberg with Vlietstra, Ludwig and Mann)... ii 110
Women in Medicine at Yale, The Office for (Codish)... viii 503
Women Physicians in Connecticut, A Survey (Callan and Klipstein) ................................. viii 494
Women Psychiatrists in Connecticut (Martin with Green and Minear) ................................... vii 437

# AUTHORS' INDEX

Volume 45 December, 1981

A

Abrahams, I.W. xii 761
Abram, M.B. iii 163
Aseltine, Jr., D.T. i 1

B

Berkowitz, R.L. ii 83
Bertonazzi, L.P. vii 454, x 659
Bibro, M.C. iv 215
Bilsel, S.I. xii 773
Blumberg, N. ii 85
Bollet, A.J. iv 223
Bove, J.R. viii 507, xii 753
Brand, M.H. iii 139
Bush, W.S. viii 507

C

Callan, C.M. viii 491, 494, 504
Camaione, D.N. x 620
Carpenter, III, R.J. ii 81
Cary, J.M. vii 427
Chehrazi, B. xi 690
Chotkowski, L.A. xii 773
Clinton, T.F. vi 371
Coatsworth, J.S. ix 587, x 647
Codish, K.D. viii 503
Crawford, M.D. viii 517
Cullen, M.R. vi 363

D

D'Aiuto, M.L. xi 695
Davidoff, F. iii 167
Dean, M.A. vii 432
Deitch, J.S. vi 353
Delaney, K.M. v 309
DeMaio, J.T. i 1
Dubin, S. viii 507
Dunn, E. vii 425

E

Edelstein, B. viii 496
Ersing, W.F. ix 578

F

Fabro, J.A. x 645
Field, R.E. xi 717
Fleming, R.J. vi 349
Frankel, M.S. xii 777
Fulkerson, J.P. x 619, 642

G

Gage, J.R. vii 427
Garrell, M. iii 175
Gershman, S.T. i 17
Giwa, L. vi 353
Glickman, M.G. v 296
Gordon, B.D. xii 775
Gossling, H.R. x 619
Graeber, C. viii 511
Granville, N.B. i 14
Green, M.J. vii 437

H

Hahn, I.S. iv 220
Hampton, W.R. x 633
Harley, W.D. vi 349
Harlin, V. viii 493
Hayes, J.R. xi 707
Healy, A. ix 571
Heiger, A.A. viii 515
Hess, O.W. iv 254
Hoffer, P.B. v 288
Holmes, G.L. vi 358
Horty, J.F. vi 383
Hsiung, G.D. vii 417
Humphries, R.H. i 11

I

Isele, W.P. iii 191

J

Jaffe, C.C. v 284, 291
Job, G.G. iv 220
Jokl, P. x 637

K

Kandall, C. ii 83
Kapp, D.S. xii 755
Katz, A.J. ii 85
Katz, M.E. iv 220
Kay, H.R. ix 547
Kinder, B.K. xi 687
Klipstein, E. viii 494
Klopfer, A.H.L. vii 443
Koornick, A.R. vi 353
Kovalchik, III, M.T. vii 423

L

Lachman, A.S. i 7
Lakin, P. viii 511
Landry, M.L. vii 417
Lapkin, R. viii 511
Leach, Jr., C.N. i 7
Leppert, P.C. ii 83
Levinson, E.D. viii 513
Lewis, J.N. i 17
Ludwig, J. ii 110
Lynch, J.T. v 309

M

Maleh, J.D. xii 773
Mangi, R.J. x 637
Mann, R.J. ii 110
Maressa, V.A. ix 589
Marjani, M.A. vii 425
Marks, J.H. ii 103
Marks, J.S. i 17
Martin, K.H. vii 437
Mascardo, R.N. ii 78
May, D.P. xi 733
Meisel, A. i 27, ii 107
Minear, J.D. vii 437
Molnar, G. ix 574
Most, R.S. i 17
Myers, T.J. i 14

MC

McCartney, J.J. xi 725
McCormick, J.R. ix 555

McKeever, M. vi 358
McKinley, M. iii 139
McLucas, E. i 7

N

Nelson, A.R. i 39
Neumann, H.H. xi 713
Novicky, D. iii 148

P

Palermo, G.J. xii 753
Pasky, III, R. vi 356
Perkerson, M.D. i 14
Pertschuk, M. iv 238
Pinkerton, R. iii 141

R

Ramanan, C. iii 141
Redler, M. viii 511
Reed, M.E. iii 189
Renshaw, T.S. vii 427
Ritter, H.A. i 23
Robins, J.M. vi 363
Romanus, R.J. xi 717
Rosenfield, A.T. v 281
Rothblum, E.D. viii 501
Roush, G.C. xii 767
Rubin, R.N. ix 551
Russman, B.S. vi 358
Russo, Jr., R.D. xi 699

S

Saieh, T. vii 425
Saltzman, M. iii 139
Sands, Jr., M.J. i 7
Saranchak, H. viii 513
Sargent, D.A. ix 583
Sarma, A. viii 513
Sava, G.F. vi 349
Savage, J.M. ii 115
Scherzer, H.H. x 628
Schroeder, P.J. xii 759
Schuster, C.L. i 11
Schwartz, P.E. iv 215
Shieh, C. i 4
Siegel, B.H. vii 441
Siegel, B.S. vii 441
Sigman, R. viii 513
Silbert, J.A. viii 507
Silverman, M.L. v 309
Sinatra, S.T. x 620
Skydell, J.L. xi 687
Smith, N.L. vi 353
Snyder, III, G.G. ii 81
Solomon, R.Z. viii 487
Son, Y.H. ii 75, xii 755
Soroff, H.S. vi 353
Southgate, M.T. viii 483
Sowka, M.P. ii 91
Spangler, S. iv 215
Stahl, R.S. ix 545, xi 687
Steckelberg, J.M. ii 110
Stewart, W.B. xi 690
Sullivan, P.R.C. ii 78

T

Takata, H. i 7
Taub, S. ix 597
Taylor, K.J.W. v 281
Terranova, G.J. xii 775
Thakur, M.L. v 302
Tilson, J.Q. iv 245
Tinanoff, N. iii 141
Todd, J.S. viii 518
Toole, A.L. iv 220
Tortora, M.J. i 1
Touloukian, R.J. iv 241
Triolo, P.A. xi 699
Tung, R. ix 555

V

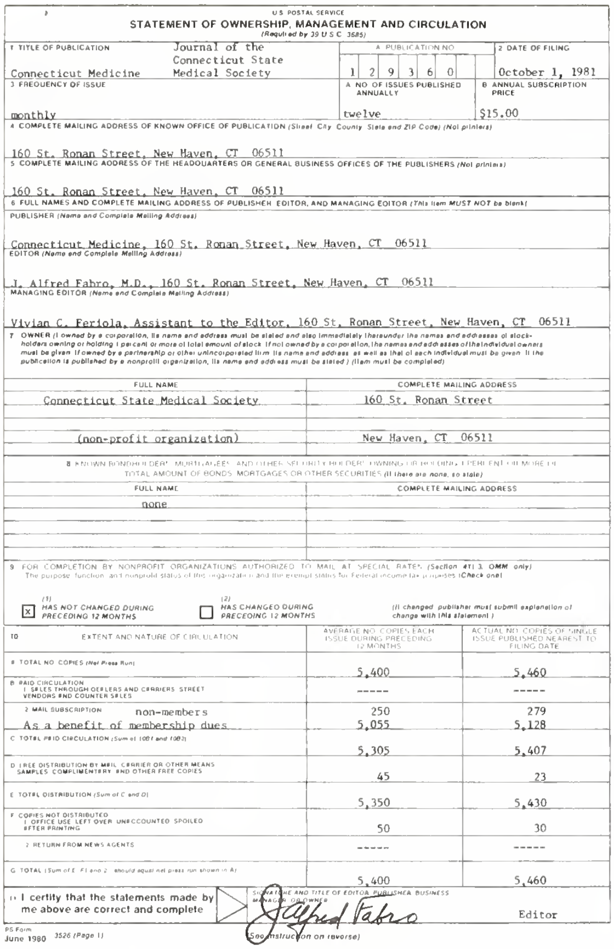
Vlietstra, R.E. ii 110
Vo, N.M. i 1

W

Wabrek, A.J. ix 559
Wagner, Jr., F.C. xi 690
Walker, J.I. ix 593
Warring, Jr., F.C. iii 177
Weinstein, D. x 655
Weisblat, D.I. iii 144
Wender, D.F. ii 83
White, W.B. ix 555
Wihbey, J.G. i 4
Wilk, B.J. vi 353
Witter, B.A. i 14
Wolman, M.G. xi 731

Z

Zilberstein, B.S. vi 353
Zlotsky, N.A. x 625



U.S. POSTAL SERVICE

**STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION**

*(Required by 39 U.S.C. 3685)*

| | | | |
|---|---|---|---|
| 1 TITLE OF PUBLICATION<br>Connecticut Medicine | Journal of the<br>Connecticut State<br>Medical Society | A PUBLICATION NO<br>1 2 9 3 6 0 | 2 DATE OF FILING<br>October 1, 1981 |
| 3 FREQUENCY OF ISSUE<br>monthly | | A NO. OF ISSUES PUBLISHED ANNUALLY<br>twelve | B ANNUAL SUBSCRIPTION PRICE<br>$15.00 |

4 COMPLETE MAILING ADDRESS OF KNOWN OFFICE OF PUBLICATION *(Street, City, County, State and ZIP Code) (Not printers)*
160 St. Ronan Street, New Haven, CT 06511

5 COMPLETE MAILING ADDRESS OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS *(Not printers)*
160 St. Ronan Street, New Haven, CT 06511

6 FULL NAMES AND COMPLETE MAILING ADDRESS OF PUBLISHER, EDITOR, AND MANAGING EDITOR *(This item MUST NOT be blank)*

PUBLISHER *(Name and Complete Mailing Address)*
Connecticut Medicine, 160 St. Ronan Street, New Haven, CT 06511

EDITOR *(Name and Complete Mailing Address)*
J. Alfred Fabro, M.D., 160 St. Ronan Street, New Haven, CT 06511

MANAGING EDITOR *(Name and Complete Mailing Address)*
Vivian C. Feriola, Assistant to the Editor, 160 St. Ronan Street, New Haven, CT 06511

7 OWNER *(If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given. If the publication is published by a nonprofit organization, its name and address must be stated.) (Item must be completed)*

| FULL NAME | COMPLETE MAILING ADDRESS |
|---|---|
| Connecticut State Medical Society | 160 St. Ronan Street |
| (non-profit organization) | New Haven, CT 06511 |

8 KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES *(If there are none, so state)*

| FULL NAME | COMPLETE MAILING ADDRESS |
|---|---|
| none | |

9 FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES *(Section 411.3, DMM only)*
The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes *(Check one)*

☒ *(1) HAS NOT CHANGED DURING PRECEDING 12 MONTHS*
☐ *(2) HAS CHANGED DURING PRECEDING 12 MONTHS*
*(If changed, publisher must submit explanation of change with this statement.)*

| 10 EXTENT AND NATURE OF CIRCULATION | AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS | ACTUAL NO. COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE |
|---|---|---|
| A TOTAL NO. COPIES *(Net Press Run)* | 5,400 | 5,460 |
| B PAID CIRCULATION<br>1 SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES | ----- | ----- |
| 2 MAIL SUBSCRIPTION non-members | 250 | 279 |
| As a benefit of membership dues | 5,055 | 5,128 |
| C TOTAL PAID CIRCULATION *(Sum of 10B1 and 10B2)* | 5,305 | 5,407 |
| D FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES | 45 | 23 |
| E TOTAL DISTRIBUTION *(Sum of C and D)* | 5,350 | 5,430 |
| F COPIES NOT DISTRIBUTED<br>1 OFFICE USE, LEFT OVER, UNACCOUNTED, SPOILED AFTER PRINTING | 50 | 30 |
| 2 RETURN FROM NEWS AGENTS | ----- | ----- |
| G TOTAL *(Sum of E, F1 and 2 - should equal net press run shown in A)* | 5,400 | 5,460 |

11 I certify that the statements made by me above are correct and complete — SIGNATURE AND TITLE OF EDITOR, PUBLISHER, BUSINESS MANAGER, OR OWNER: J. Alfred Fabro, Editor

PS Form June 1980 3526 *(Page 1)* *(See instruction on reverse)*

## A Computer in Your Office?

# Why Wait?

You can now have your own in-office or on-line medical Patient Billing and Accounts Receivable Computer System.

- Automates office administration
- Eliminates manual preparation of forms
- Recalls full patient history
- Provides financial data, controls appointments and solves many other office paperwork problems

Call or write for free information or demonstration today!

**WHALEN COMPUTER SERVICES, INC.**

Box 347 ● Bennett Complex
Millbrook, New York 12545
Telephone 914-677-5025
Computer service for professionals for 12 years

# CLASSIFIED

MEDICAL/PROFESSIONAL BUILDING WANTED suitable for condominium conversion. Right building enables us to give you the highest price with capital gains advantage. Minimum 10,000 square feet. Contact: Paul Gellert, Gelco Associates, 155 West 68th Street, New York, N.Y. 10023. Phone: (212) 223-1130.

OFFICE SPACE for rent. Available for Medical Profession in a desirable North Haven location with parking facilities and easy access to I-91 and Merritt Parkway. Tel. 239-0863.

OPHTHALMOLOGY: Experienced 44-Year-Old Board Certified seeks position in established practice as general medical ophthalmologist with surgery option. All locations considered. C.V. on request. Write *Connecticut Medicine*, Box ADB (to be forwarded).

## CLASSIFIED ADVERTISING RATES

$40.00 for 25 words or less; 50 cents for each additional word.

$3.00 per insertion for confidential answers sent in care of CONNECTICUT MEDICINE. Payable in advance.

No agency commission on classified advertising.

Closing date: Copy must be received by the first day of month preceding month of issue.

A tearsheet showing classified ad as printed is sent without charge to each classified advertiser. For copy of issue, enclose $2.50 extra.

PROSPECTIVE authors preparing manuscripts for submission to *CONNECTICUT MEDICINE* should consult "Information for Authors." This material may be obtained from the *JOURNAL* office. The manuscript, including references, should be typed double spaced; all material, including figures, should be submitted in duplicate. The transmittal letter should designate one author as correspondent and include his complete address and telephone number.

MANUSCRIPTS should be submitted to the Editor, J. Alfred Fabro, M.D., *CONNECTICUT MEDICINE*, 160 St. Ronan St., New Haven, CT. 06511. Manuscripts are received with the explicit understanding that they are not simultaneously under consideration by any other publication.

COPYRIGHT: *CONNECTICUT MEDICINE* is copyrighted by the Connecticut State Medical Society. Written permission from the Editor must be obtained before reproducing, in part or in whole, any material published in *CONNECTICUT MEDICINE*. The *JOURNAL* does not hold itself responsible for statements made by any contributor.

REPRINTS are available at an established schedule of costs. A reprint rate and order form is sent to the author with his page proofs.

ALTHOUGH all advertising material accepted is expected to conform to ethical medical standards, acceptance does not imply endorsement by this journal.

SUBSCRIPTION RATE: The subscription price per year for members of the Connecticut State Medical Society is included in the annual membership dues. The subscription price per year for non-members is $15.00. (Canada and foreign, $30.00). Interns, residents, and students $7.50 per year. Single copies $2.50.

ADDRESS editorial and business correspondence to: *CONNECTICUT MEDICINE*, 160 St. Ronan St., New Haven, CT. 06511. Tel. (203) 865-0587.

*CONNECTICUT MEDICINE* is the official publication of the Connecticut State Medical Society, a voluntary non-profit association organized for scientific and educational purposes, published monthly for members of the Connecticut State Medical Society.

7 145

HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE